Government of Saskatchewan

2005 - 2006 Annual Report

Saskatchewan Environment

State of Drinking Water Quality in Saskatchewan

and the

Safe Drinking Water Strategy

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Letters of Transmittal

July 2006
Her Honour the Honourable Dr. Lynda M. Haverstock
Lieutenant Governor
Province of Saskatchewan

May It Please Your Honour:

I respectfully submit the combined Annual Report on the State of Drinking Water Quality and the Safe Drinking Water Strategy for the fiscal year ending March 31, 2006.

Respectfully submitted,

John T. Nilson, Q.C.
Minister of Environment

The Honourable John T. Nilson, Q.C.
Minister of Environment

Dear Sir:

I respectfully submit the combined Annual Report on the State of Drinking Water Quality and the Safe Drinking Water Strategy for the fiscal year ending March 31, 2006.

The 2005-2006 report describes the drinking water related goals and objectives of departments and agencies involved in drinking water and source water protection activities in Saskatchewan, including the Safe Drinking Water Strategy and related activities. Key partners in the implementation of the Safe Drinking Water Strategy include Saskatchewan Environment, Saskatchewan Health, Regional Health Authorities, Saskatchewan Watershed Authority, SaskWater, Saskatchewan Government Relations and Saskatchewan Agriculture and Food.

Saskatchewan Environment welcomes the opportunity to report on the protection, conservation and sustainable development of Saskatchewan's drinking water and related source water resources on behalf of its key partners in implementing the Safe Drinking Water Strategy. This report provides information on water related programs and services and identifies the progress made to protect and improve the quality and sustainability of Saskatchewan's drinking water supplies and source waters during 2005-2006.

As 2005 marked Saskatchewan's Centennial as a Province of Canada, the actions outlined in this report will serve as an example for sustaining and protecting drinking water resources in Saskatchewan's second century.

Respectfully submitted,

Alan Parkinson
Acting Deputy Minister

Introduction

Safe drinking water is a vital component in the protection of public health and disease prevention and therefore essential for the health and well being of Saskatchewan's citizens. High quality water is important in maintaining natural ecosystems and the species that depend upon them. The productivity of industry and sustaining commerce is vital to ensuring productive farms and ranches. The quality of drinking water, the condition of systems that produce it and the protection of source waters is an important public health and environmental issue in Saskatchewan now and for the future.

Once again this year, the report combines information on the status of drinking water, which was first reported on for the 2002-03 fiscal year, with annual reporting on the implementation of the Safe Drinking Water Strategy. The Safe Drinking Water Strategy was announced in April 2002 and continues to form the Government of Saskatchewan's strategic approach to improve the quality and management of drinking water in the province. Since the Strategy is intended to improve drinking water, reporting on the status of drinking water and the Strategy are combined into this comprehensive report. Reporting in this manner will continue to foster greater understanding of the steps being taken and progress achieved towards improved drinking water in Saskatchewan.

This is the fourth annual report on the Status of Drinking Water in Saskatchewan. This report is intended to inform residents of Saskatchewan of the status of drinking water quality, waterworks infrastructure, source water protection and water related items and measures in the province over the April 1, 2005 to March 31, 2006 period. The report is a legislated requirement under *The Environmental Management and Protection Act, 2002* and will be provided on an annual basis in future years.

The report outlines the roles, responsibilities and resources of departments and agencies involved in water management, the regulatory framework and activities undertaken by the Government of Saskatchewan to manage drinking water. The report also discusses operator certification, drinking water quality monitoring, source water protection, information management systems and public education initiatives which are key actions and indicators of performance in reaching the goals and objectives of the Safe Drinking Water Strategy. An update on progress in addressing the recommendations of the *Report of the Commission of Inquiry* into the City of North Battleford's drinking water is available on the Internet (http://www.saskh2o.ca/WaterInformationFactSheet_annualreport.asp).

The report was built on contributions from: Saskatchewan Environment; Saskatchewan Health; Saskatchewan Watershed Authority; SaskWater; Saskatchewan Government Relations; Saskatchewan Agriculture and Food; and the Municipal Financing Corporation. Saskatchewan Environment's Drinking Water Quality Section compiled the report.

The complete 2005-06 performance plan for the Strategy was published in conjunction with the 2005-06 budget on March 23, 2005 and is available at http://www.saskh20.ca/news.asp on the Internet. Reporting on planned actions and measures serves as a solid tool for communicating progress on improving the quality of drinking water. This annual report describes results for the key actions and performance measures that were published in the 2005-06 Performance Plan and the Government-wide plan released with the 2005-06 budget, available on the Internet at: (http://www.gov.sk.ca/finance/budget/budget05/2005papers.htm).

This is the third time results from the Safe Drinking Water Strategy have been published in this comprehensive manner. Improvements in the annual report are tied to continued implementation of the Government's Accountability Framework consisting of planning, measuring and reporting. Reporting year-end performance and financial results on both the Safe Drinking Water Strategy and the status of drinking water in Saskatchewan, increases accountability to the public. A performance plan for the Safe Drinking Water Strategy for the 2006-07 fiscal year was published on April 6, 2006 with the release of the 2006-07 provincial budget. A copy of the plan is available on the Internet at: http://www.se.gov.sk.ca/environment/protection/water/2006-07PerformancePlan-DrinkingWater.pdf

What is the Safe Drinking Water Strategy?

The Safe Drinking Water Strategy is a comprehensive plan of action designed to deal with the risks that affect drinking water and potentially impact the health of Saskatchewan residents. The Strategy will also provide more assurances to citizens of the province that government is helping to ensure the water we drink is safe. The Strategy was created as one of a series of Government measures to address drinking water quality and management following the tragedy in Walkerton, Ontario where people died because of contaminated drinking water. It also responds to recommendations from the North Battleford Commission of Inquiry, which examined the waterborne Cryptosporidiosis outbreak that affected that city in 2001. The vision of the Strategy is a sustainable, reliable, safe and clean supply of drinking water that is valued by the citizens of Saskatchewan.

Several departments and agencies are involved in implementing the Strategy including: Saskatchewan Environment; Saskatchewan Health; Regional Health Authorities; Saskatchewan Watershed Authority; SaskWater; Saskatchewan Government Relations; and Saskatchewan Agriculture and Food. The following is a summary of the major roles, priorities and actions of each of the government departments and agencies involved in the implementation of this Strategy.

Saskatchewan Environment

- lead ongoing planning, implementation and reporting work for the Strategy to which all participating departments and agencies contribute;
- implementation, inspections and compliance for 568 licensed municipal waterworks, 40 permitted pipelines, 43 regional or provincial park waterworks, 21 industrial waterworks, 42 other permitted waterworks and 617 wastewater facilities regulated under *The Water Regulations, 2002*;
- issue permits for construction and operation of water and wastewater works;
- policy, protocol, water quality standard and guideline development to support protection of drinking water and implementation of *The Water Regulations, 2002;*
- operator certification liaison;
- manage the drinking water information system Environmental Management System that houses water quality and inspection data for all Saskatchewan Environment regulated waterworks (drinking water and wastewater) in the province; and
- manage the *SaskH2O.ca* website that supplies a broad range of drinking water related information gathered from water management authorities within the province.

Saskatchewan Government Relations

- water infrastructure financial assistance under the Canada-Saskatchewan Municipal Rural Infrastructure Fund (C-SMRIF), the Canada-Saskatchewan Infrastructure Program (CSIP) and the Northern Water and Sewer Program;
- legislation and regulations regarding municipal protection of water sources through planning bylaws; and
- legislation and regulations regarding pricing policies and capital investment strategies for municipal waterworks.

Saskatchewan Watershed Authority

- source (surface/ground) water protection;
- watershed and aquifer planning;
- water management infrastructure;
- waterworks approval (except municipal);
- water allocation; and
- "State of Watershed" Reporting.

Saskatchewan Health/Health Regions

- responsible for inspection and compliance at semi-public waterworks and certain other waterworks as required by *The Health Hazard Regulations;*
- data management systems for Public Health Inspectors and laboratory information;
- water analysis through the Provincial Laboratory; and
- provide advice and address waterborne illnesses.

Saskatchewan Agriculture and Food

- *The Agricultural Operations Act* – intensive livestock provisions;
- *The Irrigation Act, 1996;*
- pesticide (applicator) licenses;
- research, demonstrations and technology transfer;
- farm water supplies; and
- Environmental Farm Planning (Federal/Provincial Agricultural Policy Framework).

SaskWater

- provide water and wastewater services;
- design, build, own and operate water supply and waste water systems;
- provide certified operation and maintenance for customer-owned systems;
- coordinate system assessments and audits; and
- provide program and project management services, First Nations training and technical support.

Saskatchewan Environment, Saskatchewan Health and the individual Health Regions deliver aspects of the Strategy through a system of centralized planning, protocol and standards development and regionalized inspection and compliance services. During 2005-06 Saskatchewan Environment's staff complement totaled 37.7 Full Time Equivalents (FTE) for delivery of all aspects of the department's contribution to the Strategy and drinking water management activities. Saskatchewan Environment employs an additional three FTEs in the management of the Environmental Management System and the *SaskH2O.ca* website. Saskatchewan Health Provincial Laboratory has 19.5 FTEs that are dedicated to water testing and the accreditation program in support of the Safe Drinking Water Strategy. Health Region Public Health Inspectors, Medical Health Officers and Public Health Nurses also play a role in water related activities (i.e. inspection of semi-public water supplies, issuance of Emergency Boil Water Orders, water borne disease investigations). To enhance inspection capacity and drinking water safety, funding in the amount of $506,000 was allocated to the Regional Health Authorities and Regional Targeted Programs and Services. This amount does not include additional funding provided to health regions to offset increases to salaries and benefits through collective bargaining agreements.

Saskatchewan Agriculture and Food has 10 FTEs that deliver intensive livestock inspection and regulatory approval services to ensure protection of water resources from intensive livestock operations. Two full-time positions are housed within the Development Division addressing environmental issues related to livestock development with respect to research, development, engineering and technology transfer. Seven staff are members of the Aquifer/Watershed planning technical committees. The department also develops and distributes management and technology information for conservation and grazing and crop production that reduce and/or minimize impacts to water resources.

Saskatchewan Agriculture and Food has three FTEs delivering pesticide regulatory services. *The Pest Control Products (Saskatchewan) Act* and regulations require any individual who uses or applies a pesticide to hold a valid pesticide applicator license. An applicant for a pesticide applicator license must pass a pesticide applicator course. Pesticide applicator courses are offered by the Business and Agriculture Division of the Saskatchewan Institute of Applied Science and Technology. There is a high value placed on education of the user of pesticides to mitigate the risks associated with pesticide usage. Training is recognized internationally as a key tool in risk reduction. Training results in more responsible

use of pesticides, while keeping the environment safe for the public. There are 1,900 licensed applicators in the province; the number has increased at about five per cent annually.

Saskatchewan Agriculture and Food administers *The Irrigation Act, 1996*. The legislation ensures soils and water are suitable for sustainable irrigation. Irrigation soils, water quality and water tables are monitored for sustainability.

Saskatchewan Government Relations' water related programming is mainly provided through centralized policy development and program delivery services. Key partners outside the provincial government include the federal government through the CSIP and C-SMRIF programs, participants in the Agricultural Policy Framework, municipalities and other waterworks owners, the Saskatchewan Urban Municipalities Association, the Saskatchewan Association of Rural Municipalities, the Saskatchewan Water and Wastewater Association and the Operator Certification Board. The Saskatchewan Association of Rural Municipalities and the Saskatchewan Urban Municipalities Association were key partners during consultation on the Strategy and continue to help in its further development and implementation through workshops and programming. The Saskatchewan Water and Wastewater Association and the Operator Certification Board have been instrumental in advancing waterworks operator certification in the province. The Operator Certification Board is appointed by government, but operates at arm's length in considering the qualification and standing of water and wastewater works operators in the province. Key stakeholders are consulted on a periodic basis to aid in the ongoing development and delivery of the Strategy.

The sections of the report that follow provide information on the status of drinking water in Saskatchewan during 2005-06. Further information on drinking water quality is available on the SaskH2O website (http://www.SaskH2O.ca) and on Saskatchewan Environment's website (http://www.se.gov.sk.ca). Additional detailed background information regarding drinking water quality in Saskatchewan is available at http://www.SaskH2O.ca/news.asp on the Internet. The following sections also report on the key actions and the level of performance in achieving key indicators of improvement in drinking water and related protection and enhancement measures of the Strategy.

Reporting on the Strategy is one step in implementing the Government of Saskatchewan's Accountability Framework. Transparency regarding the status of drinking water is intended to improve trust in drinking water supplies and the waterworks systems that produce it. Public reporting is intended to further the accountability of the departments and agencies that are implementing the Safe Drinking Water Strategy. Next year's annual report will again address both the status of drinking water and the published 2006-07 strategic plan.

SaskH2O

2005-06 Results at a Glance
Key Accomplishments

Summary of Performance Results

This section provides readers with an overview of the status of drinking water and accomplishments on key actions, performance measures and financial expenditures for the Safe Drinking Water Strategy for 2005-06.

Goal 1 - Waterworks systems and operations provide safe, clean and sustainable drinking water

- As of March 31, 2006, the number of certified operators increased by 425 for a total of 1,107. In excess of 96 per cent of communities with human consumptive waterworks have operators that have received some level of certification. A summary of communities with Certified Operators, System Classification and Operator Classification as of March 31, 2006 is available on the Internet (http://www.saskh2o.ca/WaterInformationFactSheet_annualreport.asp).
- Permitting for municipal waterworks continued through the 2005-06 fiscal year. A total of 644 waterworks have been issued new permits since the implementation of the Strategy. The Guidelines for Canadian Drinking Water Quality are being included in each new waterworks permit. A total of 274 additional wastewater works permits were issued that took effect in 2005-06.
- Compliance with bacteriological water quality standards (90 per cent of the time) increased from 95.2 per cent in 2004-05 to 95.4 per cent for the 2005-06 fiscal year.
- Compliance with the disinfection standard remained relatively unchanged from 90.2 per cent in 2004-05 to 90.1 per cent in 2005-06.
- The number of waterworks regulated by Saskatchewan Environment which do not meet minimum treatment requirements was reduced to 14 as of March 31, 2006, a 42 per cent reduction from the previous year.
- SaskWater provided technical assistance and training for more than 100 operators on 48 First Nations and two operators in two northern communities, as well as tutoring operators preparing for their operator certification.
- SaskWater managed $2.41 million of its own capital projects in 2005 and managed projects worth another $5.38 million on behalf of municipal and government customers.
- Under the infrastructure financial assistance programs, $2.2 million in federal and provincial funding was paid out under the C-SMRIF to eight water and sewer projects and $6.4 million in federal and provincial funding was paid out under the CSIP to 44 water and sewer projects. Also, $4.1 million in provincial funding was spent on water and sewer projects in 24 northern communities under the Northern Water and Sewer Program.

Goal 2 – The drinking water regulatory system is clear and effective

- Saskatchewan Environment conducted 799 waterworks and 531 sewage works inspections.
- Health Region public health inspectors inspected 1,058 public water supplies that are regulated by *The Health Hazard Regulations, 2002*.
- The Bacteriological Follow-up Protocol for Waterworks Regulated by Saskatchewan Environment was revised on two occasions. A new Contaminated Drinking Water System Follow-up Protocol was developed and implemented. Together these protocols provide guidance for managing water quality contamination problems in the province.
- During the fiscal year, there were 87 Precautionary Drinking Water Advisories (PDWA) and 13 Emergency Boil Water Orders (EBWO) issued for waterworks regulated by Saskatchewan Environment. At the end of the fiscal year, there were 56 PDWAs and four EBWOs in effect at waterworks regulated by Saskatchewan Environment.

- There were 23 PDWAs and 15 EBWOs issued for waterworks regulated by Health Regions during the fiscal year.
- A total of 52 unexpected upsets at waterworks (e.g.: chlorinator failures, equipment breakdowns) were reported and addressed during 2005-06 due to problems like low chlorine residuals, excessive turbidity/operational problems, positive bacteriological monitoring results, depressurization, flooding or other failures and resulted in issuance of a PDWA or EBWO. A total of 35 PDWAs were issued due to anticipated events such as startup or seasonal or new waterworks or planned maintenance activities.
- Approximately 125 permits to construct, upgrade or alter waterworks or sewage works were issued by Saskatchewan Environment. Additionally, approximately 445 waterworks system assessments were initiated or completed by the end of the reporting period.
- All laboratories performing analysis for waterworks regulated by Saskatchewan Environment retained accreditation in 2005-06 in accordance with criteria established by the Standards Council of Canada or the Canadian Association for Environmental Analytical Laboratories as required by regulation.
- Ongoing implementation of Saskatchewan Environment's Drinking Water and Wastewater Enforcement Protocol resulted in 52 written warnings, three Ministerial Orders and two charges laid under *The Environmental Management and Protection Act, 2002*.
- Compliance with waterworks quality assurance/quality control and emergency response planning requirements remained high - in excess of 96 per cent.

Goal 3 – High quality source waters are protected now and into the future

- The first of the draft source water protection plans has been completed. A draft plan for the Moose Jaw River watershed is under public review and is expected to be released early in the new fiscal year. Similarly, source water protection plans are at an advanced stage for the Assiniboine watershed and the Yorkton Aquifer and should be completed in coming months.
- Saskatchewan Environment continues to serve as champion of the federal-provincial-territorial process to improve wastewater management across Canada. A draft Canada Wide Strategy for Municipal Waste Water Management was developed during 2005-06 and considerable consultation activity was conducted to advance progress on the initiative.
- Approximately 15,000 acres of cultivated land was seeded to perennial cover through the Saskatchewan Watershed Authority programming with potential future benefits to watersheds including reduced soil erosion, reduced sedimentation of surface water bodies and improved condition of native rangelands.
- Staff participated in Environmental Farm Planning Workshops as technical advisors, workshop planners and coordinators. Staff assisted approximately 920 producers with the development of formal or informal Best Management Practice Plans.
- It was not possible to update the Water Quality Index (WQI) for some rivers this year because of staff vacancies and workload; insufficient samples were collected to calculate a valid WQI value at some locations. The Water Quality Index was determined for the Qu'Appelle, North Saskatchewan, South Saskatchewan and Saskatchewan Rivers for 2005-06 based on Saskatchewan Environment data and remained unchanged from previous years.
- Saskatchewan Agriculture and Food provides funding through the Agriculture Development Fund for research and development of technologies and practices that reduce or prevent agricultural impacts on the quality of water resources. Funding is provided for treatment and processing technologies that help to add value to agricultural by-products and minimize the potential for contaminants from agricultural operations to impact the environment. Research funding is provided to evaluate technologies that reduce or minimize the potential for pesticide use to impact water quality including improved products, improved application, reductions in quantities and alternatives to pesticide use such as biological controls.

- Saskatchewan Government Relations undertook major public consultations on *The Planning and Development Act, 1983* that includes implementation of municipal land use bylaws to protect water sources and worked with the Saskatchewan Watershed Authority on all of the current watershed plans, including municipal stakeholder meetings to provide information on implementation of watershed planning and water source protection.
- At the request of industry, activity on developing start-up protocols to minimize effects on private groundwater supplies was deferred and further work awaits a review by the Saskatchewan Petroleum Industry Government Environmental Committee (SPIGEC) of similar guideline development activity in Alberta.

Goal 4 – Citizens and consumers trust and value their drinking water and the operations which produce it

- Based on a March 2006 poll conducted by Saskatchewan Environment, 70.8 per cent of people polled are willing to pay more to improve their drinking water. This value is 2.8 per cent greater than the previous poll in March 2005 and 9.8 per cent greater than the December 2001 poll prior to implementation of the Strategy.
- Based on a March 2006 Saskatchewan Environment poll, 87.3 per cent of people polled strongly agree or moderately agree that they are confident in the safety of their own drinking water. This value is essentially the same as previous survey results (up 1.3 per cent from March 2005) and represents an increase of 15.3 per cent since December 2001 when 72 per cent of people surveyed were very or somewhat confident in the quality of their tap water.
- On June 29, 2003 the SaskH2O website went on line to provide up to date information on drinking water quality to the public on a community specific basis. Since its launch, over 133,912 visitors have logged onto the website with an average of 2.3 visits per visitor and an average stay of seven minutes each time they visit the site. The length of stay is important as it represents activities such as research and downloading of water information items.
- Based on the latest available information, the average provincial per capita consumption for the period January 1 to December 31, 2004 was 333 Litres per Capita per Day or LCD (73.2 Imperial gallons). January 1 to December 31, 2005 data will be available in July 2006.

Summary of Financial Results

- Actual expenditures relating to the strategy in 2005-06 were $18.679 million, which was $5.861 million lower than the budgeted expenditures of $24.540 million. This net variance is primarily attributable to savings under the Canada Saskatchewan Infrastructure Program and Canada-Saskatchewan Municipal Rural Infrastructure Fund due to project delays. Saskatchewan Environment's Full-Time Equivalent (FTE) utilization for drinking water related programming during the 2005-06 fiscal year totaled 34.4 of 37.7 budgeted FTEs, the result of vacancies, delayed staffing and secondments. Saskatchewan Health FTE utilization for the Provincial Laboratory was at the full level of 19.5 FTEs during the reporting period. In addition to the FTEs within Saskatchewan Health, funding is provided to Regional Health Authorities for water related programs and surveillance. It is not possible to state the actual number of Regional Health Authority FTEs that are dedicated to water as a number of different disciplines (i.e. Medical Health Officers, Public Health Inspectors and Public Health Nurses) can become involved in water and or water related disease surveillance and issue-specific time is not tracked.
- Under the C-SMRIF and CSIP, Saskatchewan Government Relations provides financial support to municipalities for priority drinking water and wastewater infrastructure improvements. In 2005-06, $2.2 million in federal and provincial funding was paid out under the C-SMRIF and $6.4 million in federal and provincial funding was paid out under the CSIP. Lists for C-SMRIF and CSIP of 2005-06

approved projects are available at http://www.saskh20.ca/WaterInformationFactSheet_annualreport.asp on the Internet.

2005-06 Performance Results and the Status of Saskatchewan's Drinking Water

The following is a summary of information on the status of drinking water in Saskatchewan and progress on the goals, objectives, key actions and performance measures of the Safe Drinking Water Strategy. Further information is available by contacting Saskatchewan Environment or on the Internet (from http://www.SaskH2O.ca).

Management uses performance information to assess overall progress towards the goals and objectives of the Strategy each year. In turn, review and assessment each year allows and directs the most effective adjustment of future plans and actions to address priority elements under the Strategy. Elements of the Strategy, refocused as a result of this assessment, will see further concentration on ensuring options for provision of safe drinking water in small communities, implementation of operator certification and water quality standards in the 2006-07 fiscal year.

The key actions originally presented in the 2005-06 plan are listed below, followed by a report on actual progress for each. Actual results information is included for all key actions and performance measures that were published in our 2005-06 Performance Plan as well as for all commitments related to the Safe Drinking Water Strategy in the government-wide 2005-06 Performance Plan Summary. On March 23, 2005, a 2005-06 Performance Plan for the Strategy was released and is available at http://www.saskh20.ca/news.asp on the Internet. Further descriptions of the performance measures are included in this document and can also be obtained from Saskatchewan Environment. All major external factors that could have an impact on performance results have been identified and explained. Additionally, significant efforts have been made in ensuring performance data is valid, through ongoing review and validation of data. *In general, performance in addressing drinking water quality and source water protection management through the Safe Drinking Water Strategy in Saskatchewan has paralleled or exceeded performance in other Canadian provinces where similar strategic initiatives are in place.*

Goal 1 - Waterworks systems and operations provide safe, clean and sustainable drinking water

Objective 1 –Waterworks staff are capable and well-trained

Provision of safe drinking water is highly reliant on the knowledge and capabilities of waterworks operators and the manner in which they apply their skills to produce and monitor the quality of drinking water. Along with source protection, sound and capable infrastructure and water quality monitoring, knowledgeable operators capable of sound waterworks operations are one of the elements of a "multi-barrier approach" to ensure safe drinking water. During 2005-06, significant progress was made in advancing this objective. There were approximately 1,700 operator certification exams written and an additional 425 operators became certified at Saskatchewan Environment regulated facilities. A review and consultation on operator certification requirements was conducted to examine the feasibility of enhancing operator training regulations to require all operators working at Saskatchewan Environment regulated waterworks be certified to some level by 2010.

Key Results
The key actions originally planned for 2005-06 are shown below, along with the responsible partner, followed by our actual progress towards the key action and changes affecting the status of drinking water.

- Continue to support implementation of operator certification requirements by the deadline of July 2005. Operator certification will be advanced by encouraging the development of co-operative solutions with service providers, refining and implementing a system of shared "regional operators", liaising with the Saskatchewan Water and Wastewater Association (SWWA) and workshops, etc. [2005-06 planned result - Environment]

  Saskatchewan Environment contributed to workshops and conventions held by Saskatchewan Urban Municipalities Association (SUMA), the Saskatchewan Association of Rural Water Pipelines, the Saskatchewan Association of Rural Municipalities (SARM), SWWA and New North on drinking water as a means to advance operator certification during the fiscal year. Operator training and certification continues and is making good progress. Approximately 1,700 exams were written over the 2005-06 reporting period. Saskatchewan Environment continued to advance its policy on regional/contract waterworks operators to aid smaller waterworks in ensuring operations under the direction of a certified operator.

- The outcome of the 2004-05 Certification Advisory Committee review of operator certification requirements will be examined and advanced to enhance operator training. If found appropriate, certification of all operators working at Saskatchewan Environment regulated waterworks by 2010 will be advanced. As an aspect of the multi-barrier approach, operator certification remains a critical element in ensuring safe drinking water. [2005-06 planned result - Environment]

  Saskatchewan Environment advanced the review of the operator certification program throughout the 2005-06 fiscal year by means of a series of meetings with the stakeholder-based Certification Advisory Committee (CAC). Consultations with the CAC were completed. However, several issues related to operator education and continuing education arose that required further consideration with the CAC. These issues were resolved and the final report is being prepared. The stakeholders consulted were in full support of operator certification. It is expected that the CAC will make recommendations regarding examinations, applicability of examinations, certification of individuals, use of National Occupational Standards for Canadian Water and Wastewater Operators, application of "direct responsible charge", upgrading certification and Continuing Education Units, adequate funding for the Operator Certification Board by Saskatchewan Environment and that the existing July 15, 2005 implementation date remain unchanged. The CAC will likely further recommend that every operator working in a waterworks or wastewater works should be encouraged to become certified to some level.

  In terms of overall progress on operator certification, the Operator Certification Board continued to certify water and wastewater works operators throughout 2005-06. As of March 31, 2006, there were 532 waterworks licensed by Saskatchewan Environment with at least one certified operator. Other communities used the services of a regional or contract operator. Many other operators have taken exams and were in the process of obtaining certification as the end of the reporting period approached. Saskatchewan Environment will continue to work with municipalities, waterworks owners and others to advance operator certification implementation in the future.

Table 1 provides additional information on the number of waterworks with certified operators since 2000-01 for all waterworks regulated by Saskatchewan Environment.

Table 1: Certification Summary Water and Wastewater Works

	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06
Certified operators*	44	293	403	533	682	1107
All Waterworks with certified operators	24	116	217	219	326	532
All Waterworks meeting new standards	1	35	92	144	202	461
Per cent meeting new standard	0.2%	5.7%	15%	23%	35%	74%***
Number of licensed works**	609	609	617	630	641	714***

* Operators working in Saskatchewan Environment regulated waterworks.

** Licensed works includes municipal water treatment works, water distribution systems, wastewater treatment works and wastewater collection systems.

*** 92 of the licensed waterworks in the province have applied for or been granted hygienic classification as of March 31, 2006. Waterworks classified as hygienic systems do not require a certified operator. Percentage overall compliance is based on the reduced number of human consumptive systems waterworks requiring certification (588). Additionally, many other waterworks operators were in the process of examination or certification as of the end of the reporting period. Additionally, some works were permitted near the end of the reporting period.

Source: Saskatchewan Environment certification records database.

Table 2 provides information on the number of operators certified at various levels in all categories of the water and wastewater treatment industry in Saskatchewan during 2005-06.

Table 2: Distribution of Certified Operators at Water and Wastewater Works - Fiscal Year 2005-06

System Classification	Water Treatment	Water Distribution	Wastewater Treatment	Wastewater Collection
Small System[1]	196	202	108	106
Class-1	350	438	381	348
Class-2	255	259	67	125
Class-3	51	15	11	4
Class-4	27	12	22	7
Total	879	926	589	590

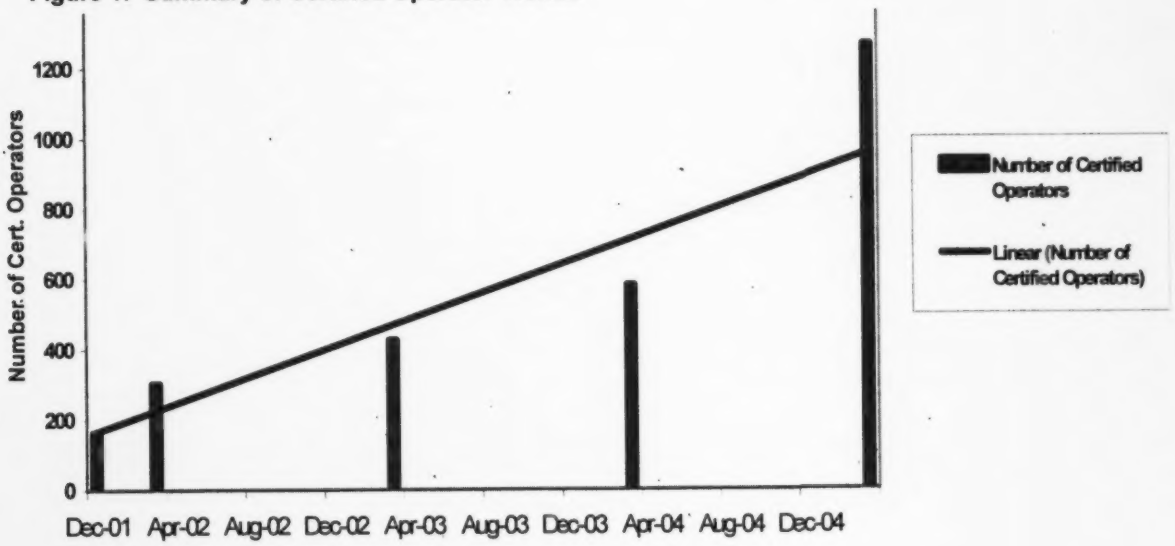
[1] There are several types of Small Systems. A Small Water System is defined as a Class-1 groundwater treatment and/or Class-1 distribution system, serving fewer than 500 people. Small treated drinking water pipelines serving fewer than 500 people can be classified as Small Systems and some of their operators have become certified as small System operators, but only under Water Distribution. A Small Wastewater System is a Class-1 wastewater treatment system (generally a lagoon system) and/or a Class-1 collection system serving fewer than 500 people.

Source: Saskatchewan Environment certification records database – all regulated systems.

Figure 1 provides a historical summary of the number of operators certified to date. During 2005-06, the number of all certified operators reported by the Operator Certification Board increased to 1,265 as of March 31, 2006. This is an increase of 513 over the previous year and measures all certified operators,

including those who do not operate waterworks regulated by Saskatchewan Environment. First Nations operators were required by Indian and Northern Affairs Canada (INAC) to become certified by the same criteria of education, experience and examination as operators mandated by Saskatchewan Environment. Since INAC did not have a certification program of its own, Saskatchewan Environment invited the First Nations operators to participate in its certification program.

Figure 1: Summary of Certified Operator Trends



Source: Saskatchewan Environment certification records database

The sharp increase in the number of certified operators during this last fiscal year is the result of the phase-in period of the certification program coming to a close in July 2005. In 2004-05, changes were made to create a self-funding system to support administration of operator examinations with all certification exams being facilitated by one agency. These changes did not appear to affect the rate at which operators were certified in 2005-06. A partial summary of communities with Certified Operators, System Classification and Operator Classification as of March 31, 2006 is available on the Internet (www.SaskH2O.ca/foroperators.asp)

Measurement Results

Per cent of communities with human consumptive waterworks whose operators have received some level of certification

Table 3: Per cent of communities with human consumptive waterworks whose operators have received some level of certification

	September 30, 2004	March 31, 2006	Annual Change
Per cent of communities with human consumptive waterworks whose operators have received some level of certification	54.3	96.8	42.5 ↑

Source: Saskatchewan Environment – Environmental Management System

As of March 31, 2006, 96.8 per cent of communities with human consumptive waterworks have operators that have achieved some level of certification (Table 3). This is a significant increase since the revised measure was developed in preparatory planning for the 2005-06 fiscal year. Approximately 99.5 per cent of the population served by a community (municipal) waterworks have an operator that has received full certification on some level of training. Knowledgeable, certified operators help to ensure safe drinking water.

This measure was redefined for the 2005-06 reporting period as a better measure of the implementation of operator certification, and thereby the relative protection afforded to drinking water supplies. The performance measure was changed because larger communities with a greater number of waterworks certified operators can result in a possible misrepresentation of the acceptance and implementation of operator certification in Saskatchewan. The performance measure is primarily controlled by the owner of the waterworks, but also requires cooperation from the waterworks operator(s). Acceptance and uptake of operator certification is key to ensuring the delivery of safe drinking water and therefore a reason this performance measure was selected. Implementation of operator certification in Saskatchewan is comparable with levels achieved in Alberta where operator certification has been fully in place for over a decade.

Objective 2: Infrastructure produces water that meets the National Drinking Water Quality Guidelines

Infrastructure design, capability, condition and maintenance are critical in the production of safe drinking water. Standards, incentives, requirements, compliance measures and implementation plans must also be in place to ensure that waterworks are operated and monitored to achieve drinking water of a quality that protects human health. The Guidelines for Canadian Drinking Water Quality (see: http://www.hc-sc.gc.ca/ewh-semt/pubs/water-eau/doc_sup-appui/sum_guide-res_recom/index_e.html) are used in Canada as the definitive measure of science-based safety criteria for drinking water. Saskatchewan has now adopted the guidelines as standards (see: http://www.se.gov.sk.ca/environment/protection/water/Drinking_Water_Standards_post.pdf).

During 2005-06, progress continued in advancing this objective. Compliance with bacteriological drinking water quality standards is high having increased slightly to 95.4 per cent. Compliance with the disinfection standard also remains high at 90.1 per cent in 2005-06. In cases where compliance is not attained, Saskatchewan Environment follows up through the use of inspections, PDWAs or warnings as a means to help improve water quality and protect consumers. Phase-in of water quality standards continues at existing waterworks and are in full effect at new waterworks. In 2005-06, $4.1 million in provincial funding was spent under the Northern Water and Sewer Program in 24 communities. Under the CSIP, $6.4 million in federal and provincial funding was spent on 44 water and sewer projects and under the C-SMRIF, $2.2 million in federal and provincial funding was spent on eight water and sewer projects.

Key Results
The key actions originally planned for 2005-06 are shown below, along with the responsible partner, followed by our actual progress towards the key action and changes affecting the status of drinking water.

- Advance and implement strategies to aid small waterworks to ensure the provision of safe water by affordable and publicly acceptable means. This approach will further enhance provision of safe water in the province. [2005-06 planned result - Environment]

  Saskatchewan Environment advanced application of the hygienic waterworks requirements, which alleviate many requirements for small waterworks while ensuring provision of safe water. As of

March 31, 2006, 90 waterworks have received or applied for hygienic waterworks classification. The department also continued to implement the regional/contract operator certification policy to assist in ensuring waterworks operations are under the direction of a certified operator.

Saskatchewan Environment in conjunction with the Policy and Programs Sub-committee for the Safe Drinking Water Strategy, also advanced new strategies to aid small waterworks provide safe and affordable drinking water during 2005-06. Completion and implementation these strategies are expected in 2006-07.

- Implementation of a "cluster strategy" to establish regional anchors from which water services are delivered is underway. This business growth strategy allows for more cost-efficient and effective delivery of services compared to service provision on a one-off basis. In addition, SaskWater will continue seeking to expand the customer base for its existing regional water supply systems. [2005-06 planned result - SaskWater]

SaskWater continues to develop business proposals/solutions with its municipal, industrial and community clients with a focus on growing its service area through its hubs and spokes strategy. This strategy is aimed at establishing regional anchors or hubs from which water and wastewater services are delivered. Service clusters result in economies of scale, allowing for more cost-efficient and effective delivery of services compared to service provision on a one-off basis. Services are offered in various lines of business including certified operations and maintenance (O&M), water supply and treatment, project management and waterworks evaluations.

SaskWater assists its community clients in determining a water price and water utility budget based on commerciality, where Water Rate = Capital + Operating Cost. In addition, discussions always include a strong emphasis on the need to ensure long-term utility sustainability.

SaskWater owns seven water treatment plants, 30 water pump stations and over 803 kilometers of pipeline. Through this network, the company provides water (potable and non-potable) to 50 municipal customers, 37 industrial customers, 42 public water boards, user groups, co-operatives and pipeline associations that supply water to about 1,200 rural households and farms. In total, SaskWater supplies to approximately 40,000 Saskatchewan residents.

SaskWater's stand-alone water treatment plants are located at Gravelbourg, Edenwold, Pierceland and White City. Its two large plants, producing water for regional systems in central Saskatchewan, are located at Wakaw and Melfort. SaskWater's water supply and wastewater systems provide water and wastewater treatment that meets or exceeds regulatory requirements.

SaskWater has added St. Louis and Elbow as new treated water supply customers and has added Elbow and Jackfish Lake West Water Utility Board in the Meota area as Certified O&M agreement customers.

SaskWater launched Certified O&M as a line of business late in 2002. SaskWater partners with communities to provide certified operations and maintenance of their water and wastewater utilities, including water supply, treatment, storage, distribution and wastewater treatment and disposal. SaskWater also provides customer and regulatory reporting, 24/7 continuous monitoring, emergency planning and customer support services. SaskWater works with customers to determine an appropriate level of service depending on the existing infrastructure and the customer's needs. All services are supervised or performed by certified operators.

Certified O&M services are currently provided to 10 municipal customers and one rural pipeline association. The company also owns and operates a regional wastewater treatment facility serving three customers near Nipawin; a municipal wastewater facility serving Pierceland and has begun

construction on a third wastewater facility in Fort Qu'Appelle. The company has also purchased and installed new chlorine monitoring devices to support 24-hour remote monitoring of water quality for the North Central Rural Pipeline Association.

SaskWater also provided technical assistance and training for 100 operators on 48 First Nations and two operators in two northern communities, as well as tutoring operators that are preparing for their operator certification.

- To assist northern municipalities (in 2005-06) in providing safe drinking water and ensuring sewer systems do not contaminate surrounding areas and water sources, $6.3 million has been allocated under the Northern Water and Sewer Program for projects in northern Saskatchewan, of which $4 million will be CSIP funding. In addition, $800,000 will be available under the Northern Emergency Water and Sewer Program for emergency repairs to water and sewer systems. Also, $395,000 will be made available to provide engineering, operating and maintenance expertise and advice to northern communities on their water and sewage systems. Government Relations will also develop and implement a strategy to address longer-term critical northern water and sewer needs. [2005-06 planned result - Government Relations]

  In 2005-06, $4.1million in provincial funding was spent under the Northern Water and Sewer Program in 24 communities, of which $1.9 million was CSIP funding. Under the Northern Emergency Program, $473,094 was spent on northern water and sewer system repairs that arose during the year. Also, $531,959 was spent on engineering operating and maintenance advice to northern communities on water and sewer systems. The department began work on the development of a strategy to address longer-term critical northern water and sewer needs. A list of the communities funded under the Northern Water and Sewer Program and the Northern Emergency Program is provided at http://www.saskh20.ca/WaterInformationFactSheet_annualreport.asp on the Internet.

- $13 million in federal and provincial funding will be paid out under the CSIP to previously approved water and sewer projects. All funding has been allocated under the CSIP. Under the new C-SMRIF, it is estimated that about $3.42 million in federal and provincial funding will be allocated to municipalities in 2005-06 for water and sewer projects. This funding will assist municipalities in providing safe drinking water and ensuring sewer systems do not contaminate surrounding areas and water sources. [2005-06 planned result - Government Relations]

  In early 2005-06, from savings that have occurred under the CSIP, $1.4 million in federal and provincial funding was approved for six new water and sewer projects, plus additional funding to two existing projects. Under the CSIP, $6.4 million in federal and provincial funding was spent on 44 water and sewer projects. Payment of the remaining CSIP funding has been extended to the end of 2007-08 to allow for completion of previously approved projects".

  Under the C-SMRIF, $17.6 million in federal and provincial funding was approved for 47 water and sewer projects in 2005-06 and 2006-07. In 2005-06, $2.2 million was paid out to eight water and sewer projects under the C-SMRIF.

In terms of the status of drinking water in Saskatchewan, the bacteriological quality of water is a critical element. When bacteriological standards are exceeded there is a possibility of significant health effects for consumers. Implementation of water quality standards continues through permitting, inspection and follow-up on monitoring results. Saskatchewan uses coliform bacteria as an indicator of the quality of drinking water. Routine analysis for *E. Coli* was implemented by the Provincial Laboratory and the Saskatchewan Research Council during the fiscal year to help in improving the meaning and rapidity of monitoring results. Saskatchewan's standards for bacteriological drinking water quality are more stringent than the Guidelines for Canadian Drinking Water Quality. The number of samples required for bacteriological water quality monitoring of a waterworks is based on the number of people served by the

system (see Municipal Drinking Water Quality Monitoring Guidelines at http://www.SaskH2O.ca/foroperators.asp). When a routine water sample shows the presence of bacteria, follow-up activities including repeat sampling are performed. Saskatchewan Environment issued three Precautionary Drinking Water Advisories during 2005-06 when bacteriological problems arose at waterworks

During 2005-06, there were 23,155 valid routine bacteriological water quality samples submitted of which 288 samples (1.24 per cent) exceeded the water quality standards of zero total coliforms, zero fecal coliforms or greater than 200 background bacteria per 100 millilitres of water. During 2005-06, a total 23,155 of 23,084 (100.3 per cent) of the required regular samples for bacteriological water quality were submitted from waterworks regulated by Saskatchewan Environment. This is a slight decrease from 2004-05 when total sample submission compliance was 101.14 per cent. The total sample submission resulted from 303 facilities submitting more than 100 per cent of required samples during 2005-06.

There were 165 waterworks in the province that exceeded the bacteriological standards at least one time during 2005-06. During the same time period, there were three waterworks that had more than 50 per cent of their routine bacteriological water samples show the presence of bacteria (Wapiti Valley Regional Park, Baildon Hutterite Colony and Eight Mile Pipeline). Five locations had between 25 and 45 per cent of their routine samples exceed the bacteriological water quality standards (Aquadeo, Spruce Bay, Shields, Sunset View Beach and Uranium City). A total of 31 regulated waterworks had greater than 10 per cent of their regular bacteriological samples test positive during the fiscal year. See Figure 3 (page 19) for more information on the performance of waterworks regulated by Saskatchewan Environment in meeting bacteriological water quality standards.

Turbidity is a measure of the "cloudiness" of water and is an indirect measure of the number of suspended particles in water. Turbidity is a good indicator of the effectiveness of a water treatment system and is important because turbid water can harbor disease-causing organisms. Turbidity monitoring of Saskatchewan Environment regulated waterworks is required at least on a daily basis as a means to track water treatment system performance.

Saskatchewan Environment now has stringent standards for turbidity. These standards continue to be phased-in for existing waterworks and take effect upon the start-up of any new waterworks. During the 2005-06 fiscal year, on-site monitoring for turbidity and record keeping was required and these records were checked during site inspections by Environmental Project Officers.

During 2005-06, Saskatchewan Environment staff continued to ensure that waterworks owners and operators tracked turbidity-monitoring results and manage turbidity related water quality problems. There were 10 PDWAs issued during 2005-06 when turbidity related problems arose at waterworks. Turbidity testing results are being reported in conjunction with information submitted with regular bacteriological samples.

The range of turbidity results tested by all agencies in 2005-06 (municipal, private and government owners) is shown in Table 4. During phase-in of the turbidity standards presently underway, the department generally applied a turbidity standard of 1.0 Nephelometric Turbidity Units (NTU) for existing waterworks. The results reported in Table 4 are predominately based on samples collected in water distribution systems and are therefore not truly representative of water treatment efficiency, as turbidity tends to increase within water distribution systems. Turbidity also varies over time, predominately in surface water based water systems. Turbidities in excess of 1.0 NTU measured off of water filters are an indication of potential inefficiency in drinking water treatment steps.

Table 4: Range of Turbidity Testing Results – 2005-06

Turbidity Range (NTU)	Samples	Per Cent Samples	Systems*
0 – 1	18,567	90.68 %	583
1 – 2	1,194	5.83 %	247
2 – 3	369	1.80 %	100
3 – 4	171	0.84 %	65
4 – 5	64	0.31 %	34
5+	110	0.54 %	45
Totals	**20,475**	**100 %**	

Some systems had turbidities in more than one range of turbidity values.

Disinfection is widely used in Saskatchewan and Canada as one of the key methods to prevent the spread of waterborne disease. Most disinfection of drinking water in the province is performed using chlorine-based products. Waterworks regulated by Saskatchewan Environment are required to maintain:

a) a free chlorine residual of not less than 0.1 milligrams per Litre (mg/L) in the water entering a distribution system; and

(b) a total chlorine residual of not less than 0.5 mg/L or a free chlorine residual of not less than 0.1 mg/L in the water throughout the distribution system.

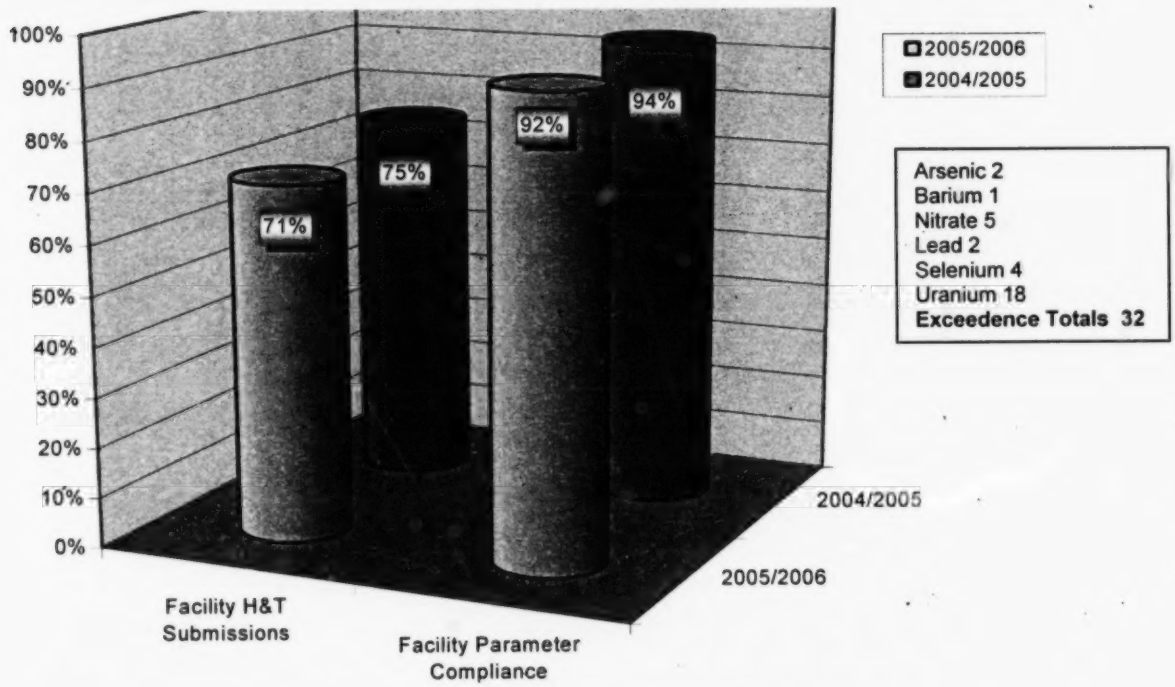
Chlorine disinfectant monitoring usually includes two tests: total chlorine residual and free chlorine residual, which are done from samples collected from the water distribution system. Free chlorine residual in drinking water is important in providing lasting protection in water distribution systems. Total chlorine residual is helpful for waterworks operators to understand the effectiveness of disinfection and to judge cleanliness of the water distribution system. On-site monitoring for chlorine residual and associated record keeping is required and these records are checked during site inspections by Saskatchewan Environment's Environmental Project Officers. During 2005-06, Saskatchewan Environment issued 10 PDWAs as a result of chlorination related concerns or problems at waterworks. During 2005-06, staff emphasized the need for waterworks operators to monitor and track chlorine residual as a means to help ensure water quality.

Chlorine residual test results are reported in conjunction with information submitted with regular bacteriological samples. These measurements are taken at the same location as for bacteriological sampling and represent chlorine residuals in the distribution system. As previously noted, a total chlorine residual of not less than 0.5 mg/L or a free chlorine residual of not less than 0.1 mg/L must be maintained in the water throughout the distribution system. During 2005-06, 607 out of 674 waterworks reported distribution system free chlorine or total chlorine residuals within regulatory limits 90 per cent of the time for an overall reported compliance rate of 90.1 per cent. See Figure 4 (page 20) for more information on the performance of waterworks regulated by Saskatchewan Environment in meeting disinfectant level requirements.

Saskatchewan Environment continues to use the Guidelines for Canadian Drinking Water Quality as the basis for the water quality standards found in *The Water Regulations, 2002*. These standards are included in each new or renewed waterworks permit. Permitting for municipal waterworks continued though the 2005-06 fiscal year. A total of 644 waterworks have been issued new permits since the implementation of the Strategy. The Drinking Water Quality Standards are being phased-in over the next four to six years for existing waterworks and take effect upon the start-up of any new waterworks.

In terms of the status of drinking water in Saskatchewan, the "health and toxicity" water quality parameters include a range of naturally occurring substances (i.e. arsenic, barium, boron, lead, nitrate, selenium, uranium, etc) and other substances such as trihalomethanes, which may be produced during chlorine based disinfection processes. These substances may represent a very small potential for adverse health effects to consumers over longer time periods. A complete listing of the health and toxicity substances monitored at Saskatchewan Environment regulated waterworks is available at http://www.SaskH2O.ca/foroperators.asp (see Municipal Drinking Water Quality Monitoring Guidelines). Implementation of these water quality standards is achieved through permitting, inspection and follow-up on monitoring results. For existing waterworks, a regulatory phase-in period requires that all works meet heath and toxicity standards by December 2008 (population of 5,000 or more) or by December 2010 (population of less than 5,000). Figure 2 depicts compliance with sample submission requirements and testing compliance for health and toxicity parameters during the 2005-06 fiscal year.

Figure 2: Health and Toxicity Facility Submission and Parameter Result Compliance – 2005-06



Source: Saskatchewan Environment – Environmental Management System

In 2005-06, there were 25 facilities that exceeded at least one health and toxicity related chemical standard resulting in a total of 32 exceedences.

During the 2005-06 fiscal year, 71 per cent of Saskatchewan Environment's licensed waterworks submitted the required heath and toxicity samples. Ninety-two per cent of these waterworks met the drinking water quality objectives for health and toxicity related chemicals. Figure 2 shows these results compared to the results for last year. Owners of waterworks not submitting required samples are provided notification on a quarterly basis to ensure long-term compliance with sample submission requirements.

During the 2005/06 fiscal year, 13 facilities exceeded the maximum acceptable concentration (MAC) for fluoride on 60 sampling occasions. Three of these facilities (Ferland, Frontier and Rush Lake) have high, naturally occurring fluoride in their ground water supplies, which accounted for 29 of the 60 exceedences. Saskatchewan Environment monitors results from all systems that artificially fluoridate or have high naturally occurring fluoride.

The present standard for trihalomethanes now being phased-in at existing waterworks is 100 parts per billion based on an average of four seasonal samples. Saskatchewan Environment has completed its examination of this water quality standard in accordance with the federal/provincial/territorial guideline development process and the water quality standard for trihalomethanes will remain at the present level of 100 parts per billion based on an average of four seasonal samples. A new standard for bromodichloromethane (16 parts per billion) may be introduced in the future.

A total of 182 surface water treatment and delivery facilities were required to participate in the trihalomethane monitoring program during the 2005-06 fiscal year, which should result in 738 samples being submitted each year. The actual number of regulated waterworks that submitted samples was 172 (94.5 per cent). A total of 580 samples (78.6 per cent overall compliance) were submitted by the facilities. During 2005-06, 123 regulated waterworks (71.5 per cent) submitted 374 samples for analysis that met the maximum acceptable concentration for trihalomethanes in drinking water.
During 2005-06, 143 of 194 regulated waterworks (73.7 per cent) produced water that met the trihalomethane objective of 100 ug/L based on the annual average of seasonal sampling. Some waterworks submit trihalomethane results voluntarily or use this type of analysis in investigating site specific concerns such as determination of the potential for their water supply to be groundwater under the direct influence of surface water.

In addition to progress made on planned actions, other key accomplishments included:

SaskWater
In northern Saskatchewan, SaskWater plays a key role in planning and managing the design and construction of water and wastewater infrastructure. SaskWater signed an agreement with the Northern Revenue Sharing Trust Account Management Board to provide program management of what has become a seven-year $35 million initiative to construct and upgrade the water and wastewater infrastructure in Saskatchewan's 35 northern communities. The program, announced in 2000 by Saskatchewan Government Relations, serves 35 communities in the Northern Administration District with the goal of providing safe and secure water supplies and environmentally acceptable wastewater disposal in the north.

SaskWater provides assistance to the communities for start-up, ongoing operation and operator training. SaskWater also provides technical assistance to 33 northern communities to assess their water and sewer infrastructure and develop replacement and management plans. As well, SaskWater responded to assist communities with nine northern sewer and water emergencies in 2005 and one northern residential subdivision development project.

SaskWater's role, backed by 20 years of experience in northern engineering, of providing project management and general technical advice to northern communities is vital to the success of the northern program.

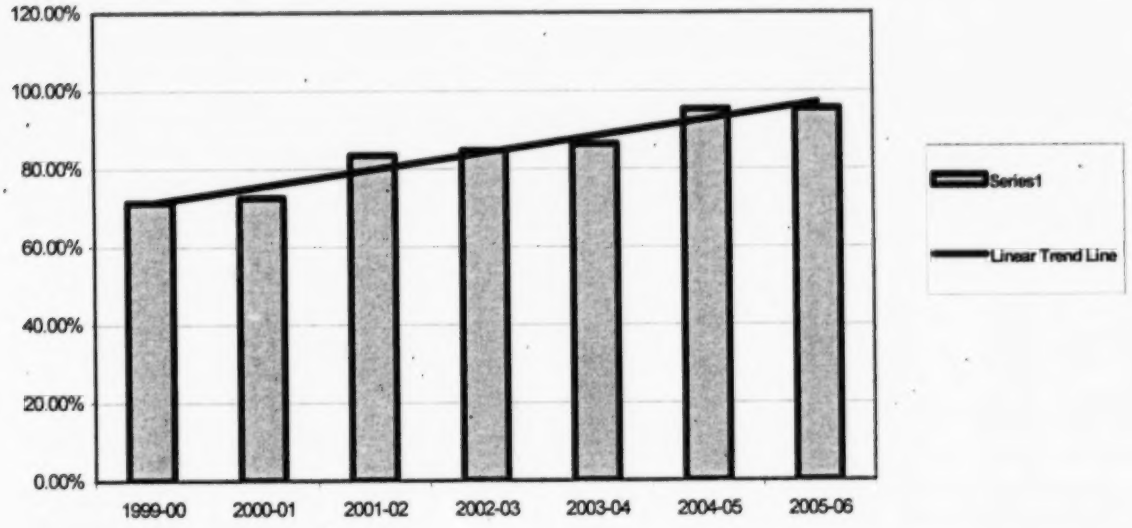
SaskWater continued to work with its strategic partners - SUMA and Consulting Engineers of Saskatchewan to help communities meet *The Water Regulations, 2002*. Regulations require operators of permitted systems to provide a detailed waterworks system assessment to Saskatchewan Environment before the end of 2005. There are approximately 600 permitted waterworks systems in Saskatchewan, and only a certain number of engineers available to do the work before the end of the

year. SaskWater acted as technical manager of the program, designed to help communities meet the regulations on time and as affordably as possible. In 2005, SaskWater tendered assessments for 142 communities bringing the program's total tendered assessment to 337.

Measurement Results

Per cent of facilities that meet bacteriological guidelines 90 per cent of the time

Figure 3: Bacteriological Standards Compliance



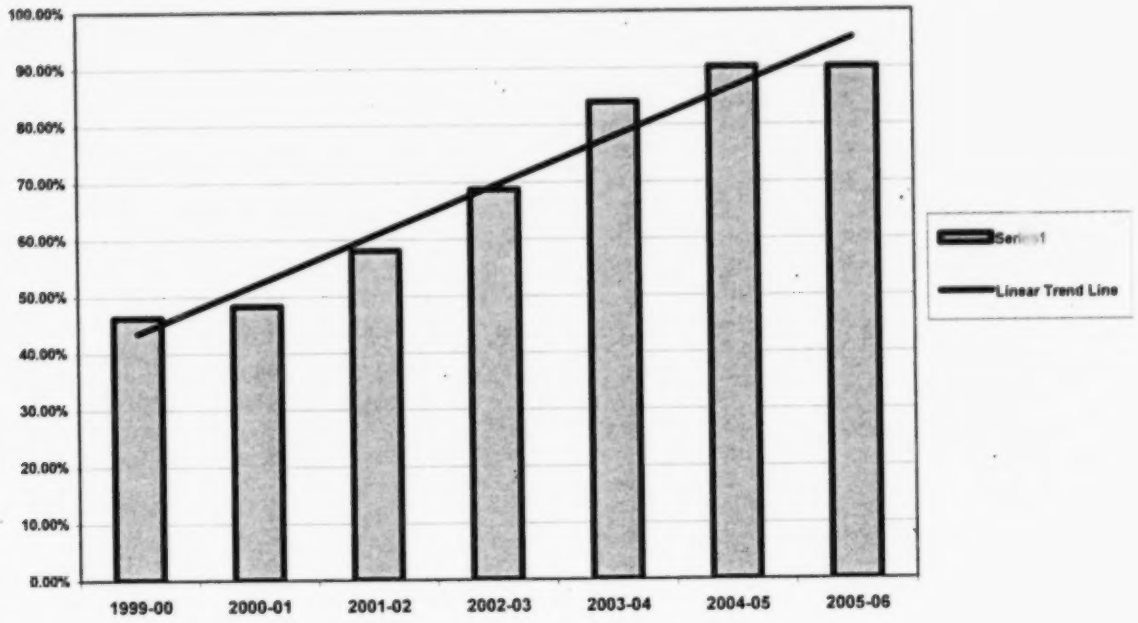
Source: Saskatchewan Environment – Environmental Management System

There has been a steady increase in compliance with bacteriological water quality standards (90 per cent of the time) over the past three fiscal years with a 9.1 per cent increase in compliance from 86.3 for 2003-04 to 95.2 per cent for the 2004-05 fiscal year to 95.4 per cent for the 2005-06 fiscal year. The steady increase in compliance with standards is the result of increased inspection and follow-up on water quality sampling results by Saskatchewan Environment staff as well as increased attention to water treatment and monitoring by waterworks owners and operators. The bacteriological quality of drinking water is important since contamination of this type can result in significant illness within a short period of time. Compliance with bacteriological water quality standards was selected as a reportable performance measure, since it provides a good indication of drinking water quality, which is important to consumers. The performance measure is primarily controlled by the owner of the waterworks, but also requires cooperation from the waterworks operator(s) in achieving bacteriological water quality compliance. Ongoing inspection and interaction with waterworks owners and operators is planned to sustain good performance in achieving water that is safe from bacteriological threats.

Measurement Results

Per cent of waterworks [regulated by Saskatchewan Environment] that meet disinfection requirements 90 per cent of the time

Figure 4: Disinfection Standard Compliance



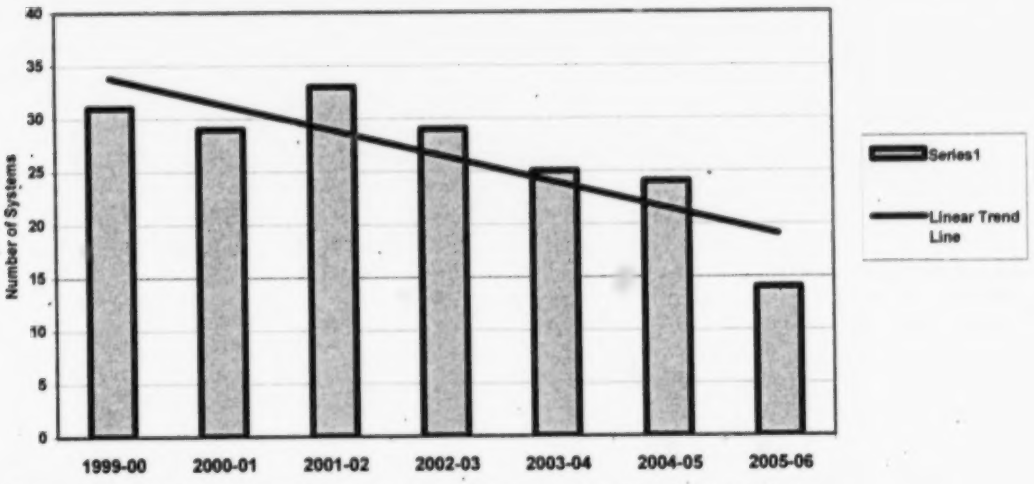
Source: Saskatchewan Environment – Environmental Management System

There has been a significant increase in compliance with the disinfection standards over the past three fiscal years with a 6.1 per cent increase in compliance from 84 per cent in 2003-04 to 90.2 per cent in 2004-05 and 90.1 per cent in 2005-06. The increase in compliance with the disinfection standards can be directly attributed to an increased field presence by Saskatchewan Environment inspection staff and a renewed awareness by waterworks owners and operators of the regulatory requirements. Proper disinfection of drinking water is one of the most important ways to ensure safe drinking water and prevent the outbreak of waterborne diseases. Compliance with chlorine residual requirements was selected as a reportable performance measure, since it provides a good indication of drinking water protection, which is important to consumers. The performance measure is primarily controlled by the owner of the waterworks, but also requires cooperation from the waterworks operator(s) in achieving disinfection standards compliance. Ongoing inspection and interaction with waterworks owners and operators is planned to sustain good performance in achieving water that is safe from bacteriological threats and meets disinfection standards.

Measurement Results

Number of waterworks that do not meet Saskatchewan Environment's minimum treatment requirements (broken down by pre and post regulatory changes)

Figure 5: Number of Waterworks Regulated by Saskatchewan Environment that do not Meet Minimum Treatment Requirements [broken down by pre and post regulatory changes].



Source: Saskatchewan Environment - Environmental Management System

As of March 31, 2006 there are 14 waterworks that do not meet Saskatchewan Environment's minimum treatment requirements, a net decline of 42 per cent since the previous year when there were 24 such works. Table 5 provides a summary of waterworks not meeting minimum treatment requirements broken down by pre and post regulatory changes. The decrease is the result of ongoing educational efforts as well as funding provided through the CSIP and C-SMRIF to upgrade works. Saskatchewan Environment's educational and compliance efforts will continue during 2006-07 and beyond as a means to reduce the number of waterworks not meeting minimum treatment requirements. 2005-06 was the final year for funding under the CSIP and the first year for funding through the C-SMRIF. Funding through the C-SMRIF will continue in 2006-07. The achievement of this performance measure is primarily controlled by the owner of the waterworks; however, the regulator has significant influence through a number of mechanisms. Periodically, as newly regulated waterworks are permitted, inadequacies in water treatment capability are discovered, an increase in newly regulated waterworks not meeting minimum treatment will be occur.

Table 5: Waterworks Not Meeting Minimum Treatment Requirements [broken down by pre and post regulatory changes].

	March 31, 2004	March 31, 2005	March 31, 2006	Annual Change
Waterworks regulated before regulatory changes	20	17	9	↓ 8
Waterworks regulated following regulatory changes	5	7	5	↓ 2
Total	25	24	14	↓ 10

Source: Saskatchewan Environment – Environmental Management System

The number of waterworks that do not meet minimum treatment requirements is a direct indication of the scale of potential water quality concerns due to infrastructure inadequacies. As of March 31, 2006, waterworks that do not meet minimum treatment requirements serve a population of approximately 1,245 residents or 0.13 per cent of the population of the province (estimated provincial population of 995,280 as of January, 2005). This measure was selected as a reportable performance measure, since it provides a direct count of the number of waterworks in the province not capable of producing safe drinking water. All waterworks regulated by Saskatchewan Environment and not meeting minimum treatment requirements are placed on PDWAs as a means to protect consumers. The department also provides technical advice to communities not meeting minimum treatment requirements to aid waterworks owners to work towards system improvements.

Objective 3: Waterworks systems and operations are financially sustainable

Ensuring the financial sustainability of waterworks is critical in the production of safe drinking water over the long-term. Waterworks deteriorate over time and may need to be expanded or replaced. Municipalities will therefore need to know the condition of their waterworks and put in place pricing and capital investment policies for these systems. Public transparency will aid in ensuring that waterworks systems are sustainable into the future.

Regulations that support this objective were established in December, 2005.

Key Results
The key action originally planned for 2005-06 is shown below, along with the responsible partner, followed by our actual progress towards the key action and changes affecting the status of drinking water.

- Consultation and enactment is planned for regulations requiring municipalities to establish and report to the public on pricing and capital investment polices for their waterworks and other related key financial information, including the extent that waterworks revenues cover expenditures and capital debt payments. These regulations will provide greater municipal accountability to ratepayers and promote greater understanding of municipal waterworks. Ratepayers can evaluate this information and determine if they are satisfied with the rate and capital investment policies. Municipal waterworks rate and capital investment bylaws are to be in place by July 1, 2006 and annual public reporting is to begin September 1, 2006. [2005-06 planned result - Government Relations]

  In the spring of 2005, a second round of consultations on simplified regulations was undertaken with the municipal sector and other stakeholders outside of government. The regulations were established in December, 2005 and are effective in 2006.

Measurement Results
Number of municipalities with pricing and capital investment policies in place for their waterworks

This measure was established to gauge compliance with new regulations that are effective in 2006, which require municipalities to put in place a pricing policy and capital investment strategy for their waterworks. Since the measure is aimed at a future event, we are unable to report results for 2005-06.

Starting in 2006-07, this performance measure has been replaced with an improved performance measure that directly gauges the progress of the objective. The new performance measure will report on the number and per cent of municipalities that have reported waterworks rates that cover waterworks expenditures and debt payments, which is a direct indicator of waterworks financial sustainability.

Government influences the measurement results through the regulations that have been established. Lack of municipal capacity will limit some smaller municipalities from establishing these waterworks policies and strategies.

Goal 2 – The drinking water regulatory system is clear and effective

Objective 1: Regulations are clear and ensure that health and drinking water quality will be protected

Provision of safe drinking water is reliant on regulatory requirements that are clear and communicated to owners and operators of waterworks. Additionally, accepted standards and practices are required to ensure requirements are achieved in the proper manner. Program delivery and related policies are necessary to track and ensure that regulatory requirements are being met. Collectively, these measures will help to ensure that drinking water is safe and that wastewater effluent discharges do not threaten the quality of source waters or adversely impact the environment.

During 2005-06, significant progress has continued on advancing this objective. A new Contaminated Drinking Water System Follow-up Protocol was developed and implemented early in the 2005-06 fiscal year to deal with incidents of chemical contamination of water supplies. Inspection protocols remain in place and Saskatchewan Environment conducted 799 waterworks/pipeline inspections and 531 wastewater works inspections at which time information on regulatory requirements was provided directly. Implementation of protocols for upset reporting and hygienic waterworks continued as a means to offer immediate response to waterworks related problems and challenges. The follow-up protocol for dealing with bacteriological water quality problems was revised on two occasions, implemented and publicized by Saskatchewan Environment, Saskatchewan Health and Health Regions.

Key Results
The key actions originally planned for 2005-06 are shown below, along with the responsible partner, followed by our actual progress towards the key action and changes affecting the status of drinking water.

- Develop mechanisms to clarify and simplify regulatory requirements for owners of waterworks to advance compliance and water safety. [2005-06 planned result - Environment]

  Saskatchewan Environment in conjunction with Saskatchewan Health, Saskatchewan Government Relations, SaskWater and the Policy and Programs Sub-committee for the Safe Drinking Water Strategy, re-examined the requirements and directly attributable costs for ensuring the provision of safe drinking water. A comparison of requirements for works of similar size governed by *The Water Regulations* and *The Health Hazard Regulations* was also conducted. New strategies to clarify and simplify the requirements and thereby aid small waterworks in providing safe and affordable drinking water were developed in 2005-06. Completion and implementation of these strategies are expected in 2006-07.

- Work will continue with SUMA, SaskWater, consulting engineers and others to implement a program to facilitate waterworks assessment in the province. Waterworks assessment standards and other information will continue to be provided to waterworks owners to inform them of the benefits, requirements and timelines of the assessment process. [2005-06 planned result - Environment]

  Saskatchewan Environment continued to support the strategic partnership formed between SUMA and SaskWater to facilitate coordination and price reduction for completing waterworks system assessments in Saskatchewan continued during 2005-06. By the end of the reporting period, a total of 445 waterworks system assessments had either been initiated or completed. Saskatchewan

Environment continued to promote the value of waterworks systems assessments by a variety of means such as convention workshops, discussions with waterworks owners and inspections. Further information on waterworks system assessment is available on the Internet at: http://www.se.gov.sk.ca/environment/protection/water/EPB233_Waterworks_System_Assessment_Standards.pdf .

- Semi-public water systems are regulated through *The Health Hazard Regulations.* Compliance with these regulations is monitored through inspections of the semi-public water systems, ensuring that the operators are routinely sampling the water supply and reviewing water quality test results. All health regions with the exception of the far north (Mamawetan Churchill River Health Region) will be striving for 100 per cent inspections (approximately 1,400) of their public water supplies. Due to staff shortages and geographic location of semi-public water systems in the north (access only by plane/boat) the Mamawetan Churchill River Health Region (MCRHR) will be using a risk-based approach for prioritizing inspections of water supplies that they regulate. Saskatchewan Health is currently working with the MCRHR to develop strategies for inspecting remote type water supplies. [2005-06 planned result - Health and Regional Health Authorities]

  During the fiscal year, Health Region public health inspectors inspected 1,058 public water supplies. Vacant public health inspector positions in the Mamawetan Churchill River Health Region that previously reduced the region's ability to perform inspections have now been staffed. However, the geographic location of semi-public water systems in the far north (access only by plane/boat) causes difficulties for the region. To assist the MCRHR in regulating remote type water supplies, Saskatchewan Health and MCRHR, in collaboration with the Saskatchewan Outfitters Association, developed self-evaluation forms that will be used by operators of isolated MCRHR regulated public accommodation facilities/water supplies in the far north. These forms will be piloted in the summer of 2006.

- In accordance with the recommendations of the North Battleford Commission of Inquiry, frequent and rigorous inspections will continue across the province for Saskatchewan Environment regulated waterworks. Two inspections at each surface water and priority groundwater waterworks and one inspection at every other regulated waterworks will be completed totaling approximately 900 inspections. Supplemental education and prevention activities will be conducted to ensure waterworks meet operational and treatment requirements. Inspection protocols will continue to be kept abreast of developments in water treatment technologies. [2005-06 planned result - Environment]

  During 2005-06, 799 waterworks inspections were conducted by Saskatchewan Environment in accordance with the department inspection protocol and targets. During waterworks inspections, the need for activities or upgrading to meet drinking water quality standards and requirements are stressed by Environmental Project Officers.

  Saskatchewan Environment continues to update components of the Drinking Water Information Binder and SaskH2O website to help keep owners and operators current with operational requirements. A total of 24 publications were prepared or updated during the fiscal year and work on another 23 publications was active at the end of the reporting period. Preparations were made during 2005-06 to place results of waterworks inspections online at http://www.saskh2o.ca/MyDrinkingWater.asp . Results of waterworks inspections should be available on-line in the first half of 2006-07 as a means to increase transparency and public trust in drinking water supplies and the associated regulatory processes.

  Waterworks inspections are carried out by the Environmental Project Officers and are the primary point of contact and compliance mechanism to ensure proper management of drinking water. During

a three-year cycle, at least one inspection will be unannounced. Table 6 summarizes the findings of key elements for inspections conducted during the 2005-06 fiscal year.

Table 6: Waterworks Inspection Finding Summary.

Inspection Element	Non-Compliant	N/A or No Response*	Compliant
Disinfection continuous at plant	7	72	720
Disinfection Free chlorine > or = 0.1 mg/L leaving the plant	82	62	655
Monitoring daily chlorine	63	76	660
Reservoirs in good repair	15	86	698
Water treatment plant in clean and orderly condition	18	51	730
A total chlorine residual not <0.5 mg/l or a free chlorine residual not <0.1 mg/l in the distribution system	126	30	643
Bacteriological testing after completion, alteration, extension or repair	30	41	728
Reporting of chlorine upsets	31	47	721
Record keeping	56	40	703

* N/A = Non-applicable. Some waterworks do not have a treatment plant such as pipeline system which may be recorded as N/A or No response

Source: Saskatchewan Environment – Environmental Management System

- A new Contaminated Drinking Water Follow-up Protocol will be developed to deal with incidents of chemical contamination of water supplies. The Bacteriological Follow-up Protocol will be revised to reflect evolving analytical methods, best practices or new developments. [2005-06 planned result - Environment]

Saskatchewan Environment developed and implemented a new Contaminated Drinking Water System Follow-up Protocol early in the 2005-06 fiscal year. This protocol outlines actions to be taken by department staff in the event of known or suspected contamination of a drinking water supply by chemicals, pesticides or radiological agents. Where a drinking water supply is suspected or found to be contaminated by chemical, pesticide or radiological substances, a "Do Not Drink" or "Do Not Use" advisory will be issued under the new protocol.

The Bacteriological Follow-up Protocol received further updating in June 2005 and February 2006 to include changes needed to accommodate new bacteriological water quality methods used by the Provincial Laboratory, introduction of Coli-Alert bacteriological water quality monitoring methodologies, media contacts and elements to address bacteriological water quality and monitoring and reporting at hygienic waterworks. The changes to the protocol also incorporated elements to enhance reporting by accredited laboratories entering the Saskatchewan marketplace.

The Bacteriological Follow-up Protocol for Waterworks Regulated by Saskatchewan Environment provides for the issuance of PDWAs by Saskatchewan Environment when there is a concern that problems (due to microbial or chemical contamination) may exist. Department staff also use a protocol for upset reporting (e.g.: chlorinator failures, equipment breakdowns) and follow-up to protect consumer health and drinking water quality. Waterworks owners and operators continue to be

advised of upset reporting requirements during inspections. A total of 52 unexpected upsets at waterworks were reported and addressed during 2005-06 due to problems like low chlorine residuals, excessive turbidity/operational problems, inadequate treatment, positive bacteriological monitoring results, breakages in water lines, depressurization, flooding or other failures and resulted in issuance of a PDWA. A total of 35 PDWAs were issued due to anticipated events such as startup or seasonal or new waterworks or planned maintenance activities.

Emergency Boil Water Orders (EBWOs) are issued by Health Region officials to deal with confirmed public health threats such as microbial contamination of drinking water. Tables 7 and 8 outline statistics for PDWAs and EBWOs issued for Saskatchewan Environment and Health Region regulated waterworks during the 2005-06 fiscal year.

Table 7: EBWO/PDWA Statistics for 2005-06 – Environment Regulated Waterworks.

Time	EBWO	PDWA
In effect prior to reporting period	5	65
Added during the reporting period	13	87
In effect at end of reporting period	4	56

Source: Saskatchewan Environment – Environmental Management System

Table 8: EBWO/PDWA Statistics for 2005-06 – Health Region Regulated Waterworks.

Time	EBWO	PDWA
In effect prior to reporting period	15	14
Added during the reporting period	15	23
In effect at end of reporting period	15	15

Source: Information provided by the Health Regions in Saskatchewan

Tables 9 and 10 provide information regarding the reasons for PDWAs and EBWOs issued during the 2005-06 fiscal year for waterworks regulated by Saskatchewan Environment and Health Regions, respectively. Further information on the nature of a PDWA and EBWO issued during 2005-06 by Saskatchewan Environment is available from the department or is available on http://www.saskh2o.ca/advisories.asp website.

Table 9: Reason for Issuing EBWO's and PDWAs during 2005-06 – Environment Regulated Waterworks.

Reason for issuance of EBWO during 2005-06	Number
Presence of E. coli in water supply	11
Operational Upset	1
Presence of pathogens in water supply	1
Total	**13**
Reason for issuance of PDWA during 2005-06	**Number**
Startup of waterworks	28
Inadequate chlorine residual	10
Planned maintenance of system	5
Un-planned depressurization of system	10
Flooding	7
Positive E. coli / bacti results	3
Inadequate treatment	2
Turbidity and bacteriological water quality concerns	2
High turbidity	8
Unauthorized connections	1
New System Start-up	2
High fluoride	1
Operational problems	4
Insufficient sample submission	1
Other causes	3
Total	**87**

Source: Saskatchewan Environment – Environmental Management System

Table 10: Reason for Issuing EBWOs and PDWAs during 2005-06 – Health Region Regulated Waterworks.

Reasons for issuance of EBWO during 2005-06	Number
Positive E. coli results	13
Positive bacti results	2
Total	**15**
Reason for issuance of PDWA during 2005-06	**Number**
Supply unsafe water-miscellaneous	4
Startup of waterworks	1
Positive bacti results	16
Lack of minimum treatment	2
Total	**23**

Source: Information provided by the Health Regions in Saskatchewan.

- Continue to implement the water and wastewater compliance and enforcement protocol to attain compliance with drinking water regulatory requirements. Department technical staff will receive new compliance and enforcement related training. [2005-06 planned result - Environment]

Saskatchewan Environment's Drinking Water and Wastewater Enforcement Protocol continues to provide direction and guidance for Environmental Project Officers to ensure uniform, effective and efficient compliance and enforcement practices are followed in dealing with non-compliance for drinking water and wastewater related violations. Protecting public health, safety of people and the environment is the overall purpose. The enforcement protocol requires that compliance be obtained through the use of public education and prevention as initial priorities while enforcement is a tool of last resort. Compliance related actions may also be applied when an issue is causing, or may cause a significant risk to public health and safety, or the environment. During 2005-06, the department continued to provide compliance related training for new and existing staff members. The Drinking Water and Wastewater Enforcement Protocol was reviewed to ensure it remains current.

During 2005-06, implementation of the Enforcement and Compliance Protocol continued and was integral in gaining compliance in problematic or difficult situations. Fifty-two written warnings were issued for waterworks and sewage works related infractions. As well, three waterworks protection orders have been issued to non-compliant parties. In addition, two charges have been laid for waterworks related infractions. Nine charges are presently before the courts awaiting judgment. The nature of water and wastewater related infractions encountered during the reporting period are summarized in Table 11.

Verbal Warnings
Verbal warnings are issued for minor offences encountered during inspection duties. Verbal warnings are documented on inspection forms used by inspection staff.

Written Warnings
Written warnings consist of letters of non-compliance and notices of violation. Written warnings are issued for non-compliance detected during inspections or when follow-up requirements identified through previous inspections or correspondence were not complied with. During 2005-06, 39 written warnings were issued to waterworks or sewage works owners. There were 52 infractions documented on the written warnings. Table 11 provides a breakdown of the infraction details.

Typically, the waterworks owners address all verbal and written warnings in a short time period. Department staff follow-up by repeat contacts or inspections to ensure warnings are addressed and protection of water quality is assured.

Waterworks Protection Orders
Waterworks Protection Orders are issued to a person responsible for a waterworks, if in the opinion of the Minister of Environment, it is necessary to do so to protect human health or the environment. Based on ongoing implementation of Saskatchewan Environment's Enforcement and Compliance Framework, the department will always pursue prosecution when a Waterworks Protection Order is not complied with. Three Waterworks Protection Orders were issued during the reporting period. Orders were issued to address non-compliance with sampling frequency, low chlorine residuals and improper record keeping. Table 11 provides a breakdown of infraction details. Saskatchewan Environment follows up on all waterworks protection orders to ensure that problems are ultimately resolved.

Prosecutions
Two charges were laid during 2005-06 for waterworks-related infractions pursuant to *The Environmental Management and Protection Act* or *The Water Regulations, 2002*. Prosecution will only be used when prevention, education and other enforcement tools do not compel the violator to comply with legislation. Nine charges still remain in the court system awaiting final judgment. Table 11 provides a breakdown of infraction details.

Table 11: Enforcement and compliance activities-Drinking Water/Wastewater 2005-06.

Infraction	Administrative Penalties	Written Warning Infractions	Ministerial Orders issued	Charges Laid	Convictions
Fail to report upset condition at waterworks		11		1	
Unlawful sewage discharge		4			
Fail to have water meter		2			
Fail to report upset condition at sewage works		3			
Improper record keeping		2			
Fail to conduct required testing		14	1		
Chlorine residuals below minimums		3	1		
No annual notice supplied to consumers		3			
Contravene conditions of operating permit				1	
Improper sewage lagoons		1			
Improper record keeping/records		2	1		
No certified operator		5			
Disorderly/unclean Water treatment Plant		1			
Fail to post hygienic taps		1			
Total		52	3	*2	

* Note: seven charges still before courts from previous reporting period

Source: Saskatchewan Environment – Resource Intelligence Program database

Saskatchewan Environment has issued 644 new waterworks operational permits since the implementation of the Strategy as a means to help ensure that health and drinking water quality are protected. A total of 125 permits to construct or upgrade water or sewage works were issued over the 2005-06 reporting period. To facilitate understanding of permitting requirements and consistent application across the province, comprehensive permitting protocols for human consumptive and hygienic waterworks have been developed, updated and posted on the internet (http://www.SaskH2O.ca).

Measurement Results

Number of accredited drinking water testing laboratories

Table 12: Number of accredited drinking water testing laboratories

March 2002	March 2003	March 2004	March 2005	March 2006	Annual Change
1	2	4	6	6 (all labs)	0

Source: Standards Council of Canada web (http://www.scc.ca/en/news_events/notices/lab.shtml)

Laboratory accreditation indicates that the laboratory has a quality system that is documented, communicated, understood, implemented and incorporates adequate review, audit and internal quality

control and ensures accurate analytical results. Laboratory accreditation was selected as a performance measure to help gauge results in ensuring safe drinking water for Saskatchewan residents. As of March 31, 2006, all six laboratories located in Saskatchewan that perform analysis of drinking water samples retained accreditation by the Standards Council of Canada or the Canadian Association for Environmental Analytical Laboratories in accordance with regulatory requirements (Table 12). Accredited laboratories include: Saskatchewan Health – Provincial Laboratory; Saskatchewan Research Council; Enviro-test Laboratories; BDS Laboratories; the City of Saskatoon Laboratory; and the Buffalo Pound Filtration Plant Laboratory. Any other water laboratories in operation in Saskatchewan do not serve waterworks regulated by Saskatchewan Environment. The performance measure is primarily controlled by the owner and management of the laboratory; however the regulator and users of the laboratories have significant influence on compliance. Compliance with use of accredited laboratories is very high.

Objective 2: Professional regulatory staff have access to the tools necessary to ensure compliance

Provision of safe drinking water is reliant in part on the training and tools that regulatory staff can access. The tools take the form of working agreements, computerized information systems and examples, guidelines and education information needed to deliver programming. Staff qualifications must also be assured and kept current with new or evolving water management processes. Collectively, these tools help to ensure that drinking water is safe and that wastewater effluent discharges do not threaten the quality of source waters or adversely impact the environment.

During 2005-06, significant progress was made in advancing this objective. Significant progress on automating data reporting between the Saskatchewan Environment's Environmental Management System (SEEMS) information system and the Laboratory Information Management System (LIMS) used by the Provincial Laboratory to facilitate electronic data exchange was accomplished. The SaskH2O website continues to provide up-to-date information on drinking water quality. Training of Saskatchewan Environment staff continued. Ongoing information exchange meetings during the 2005-06 fiscal year strengthened integration between Saskatchewan Environment and Health Region officials.

Key Results
The key actions originally planned for 2005-06 are shown below, along with the responsible partner, followed by our actual progress towards the key action and changes affecting the status of drinking water.

- Annual educational water quality workshops will be held for officials (medical health officers and public health inspectors) to strengthen integration between regulators. These meetings also provide ongoing communication and exchange and serve as a means to continually improve protocols on communicable disease response and exchange information on provincially regulated systems. [2005-06 planned result - Health and Environment]

  Saskatchewan Environment program delivery staff and managers continued to hold meetings with Health Region representatives during the fiscal year to discuss drinking water related programming, progress and waterworks specific concerns in their particular service regions. Saskatchewan Environment staff and Saskatchewan Health officials continue to discuss and consider items such as the Bacteriological Follow-up Protocol and steps for implementation of hygienic systems and as means to ensure drinking water protection. Collectively, Saskatchewan Environment and Saskatchewan Health continue to coordinate activities for the Safe Drinking Water Strategy with other participating departments through a Policy and Programs Subcommittee.

  Saskatchewan Environment also continues to implement its training protocol for staff inspecting waterworks. New Environmental Project Officers joining the department during the fiscal year received required training, which enabled them to understand protocols and priorities and thereby aid

in delivering the water and wastewater related programming. Staff were provided opportunity and advanced their Continuing Education Units as required for ongoing qualification for the previous fiscal year. An annual in-house conference for the department's Environmental Project Officers was held in late August 2005 and repeated Unit meetings were held to advance new initiatives and developments. Staff attended and in some instances provided presentations at Saskatchewan Water and Wastewater Association meetings and American Water and Wastewater Association video conferences. Training opportunities continued to be offered such as a legal sampling course, a waterworks/sewage works protection order workshop and other similar mechanisms.

- Further enhancement of SEEMS will be undertaken to support drinking water management, compliance activities and handle ever-increasing demand for data and information. Contingent on successfully completing trials on bar coding water sample bottles, drinking water information will be available to the public in two or three days as opposed to four to six weeks as is the case now. Further planning for managing wastewater information will be undertaken. [2005-06 planned result - Environment]

  With the implementation of SEEMS, Environmental Project Officers have transitioned from a "paper and file" record-keeping model to a modern information system that enables immediate checking of waterworks performance and potential environmental risk to water quality. SEEMS drinking water information is also fed into the public website *SaskH2O.ca*, launched in June 2003, where citizens are able to check on current and historic water quality in their community. As of March, 2006 the website has had an average of 132 visitors per day with an average stay on the website of seven minutes. A total of 133,912 visits have been recorded since the website went live. By the end of the fiscal year significant progress had been made on linking data reporting between the SEEMS information system and the LIMS used by the Provincial Laboratory to facilitate electronic data exchange.

- Examine timing issues with respect to northern Regional Health Authority water sample testing. [2005-06 planned result - Health and Mamawetan Churchill Health Region]

  Saskatchewan Health has commenced working with the Mamawetan Churchill River Health Region to examine the water testing protocol for remote northern water systems. Further work is planned for 2006-07.

Measurement Results
A measurement tool was under development

Goal 3 - High quality source waters are protected now and into the future

Objective 1: Risks to source water quality are known

Protection of source water quality is a component of the provision of safe drinking water. Identification of risks to source water quality is the first step in developing actions and strategies to protect source water and minimizing the cost to treat drinking water. Through the watershed planning actions outlined below, it is expected that other risks to source water quality will be identified.

During 2005-06, significant progress was made in advancing this objective. Watershed planning continued in seven watersheds in the province, with significant participation from area residents and water users. Two watershed plans were released in draft form by the end of the reporting period. Saskatchewan Environment conducted ongoing monitoring of surface waters at 21 primary network monitoring sites across the province, but at a reduced frequency. A revised set of Surface Water Quality Objectives was drafted and underwent external consultation. A new set of Stormwater Guidelines was

also completed. At the request of industry, activity on developing start-up protocols to minimize effects on private groundwater supplies was delayed and further work awaits review by the Saskatchewan Petroleum Industry Government Environmental Committee of similar guideline development activity in Alberta. There were 531 inspections of sewage works performed, which helped to identify and resolve risks to source waters.

Key Results
The key actions originally planned for 2005-06 are shown below, along with the responsible partner, followed by our actual progress towards the key action and changes affecting the status of drinking water.

- Preparation and publication of a State of the Watershed Report will be undertaken. Additionally a plan for preparation of future reports based on public comments on the State of Watershed Reporting Framework will be performed. Data collection on stressors to surface and ground water quality will be performed. Water quality data and interpretation will be provided to planning committees. [2005-06 planned result - Saskatchewan Watershed Authority]

  The State of the Watershed Reporting Framework was released to report on a standardized set of indicators, combined with a rating scheme, to assess and communicate the health of Saskatchewan's watersheds in an easy to understand report card style format.

- A water-use monitoring program will be developed and implemented to ensure actual municipal, industrial and agricultural water use is known and is within the allocated amount. Data will also be collected on water supply and preparation of a water supply report will be initiated. [2005-06 planned result - Saskatchewan Watershed Authority]

  Forty-three water use audits were conducted on a variety of municipal, industrial and agricultural projects of which 27 where industrial audits.

- The current water quality monitoring program will be revised to include data for key indicators of watershed and aquifer health. Further revisions will be made to the Saskatchewan Watershed Authority's water quality monitoring program in 2005-06 for key indicators of watershed and aquifer health. [2005-06 planned result - Saskatchewan Watershed Authority]

  The State of the Watershed Report addresses changes to monitoring and key indicators of watershed and aquifer health.

- Inspections at sewage treatment facilities in the province will be conducted in accordance with the department's protocol to track and begin the process of improving the management of systems which represent a risk to source water quality. Improvements in wastewater management will be initiated through owner education and permitting methods. [2005-06 planned result - Environment]

  Saskatchewan Environment conducted 531 inspections at wastewater works across the province during the 2005-06 reporting period. Information gained from the comprehensive inspection results is used to advance wastewater management in the province and reduce impacts to source water. Implementation of the Canada-wide Strategy for Municipal Waste Water Effluent will rely in part on information gained from inspections of these systems. A total of 274 additional wastewater works permits were issued that took effect in 2005-06.

- The Rural Water Quality Advisory Program will, over the next two years (2005-06), sample and test 360 wells in the Gull Lake and Yorkton aquifers as part of a systematic evaluation of risk to human health. [2005-06 planned result - Saskatchewan Watershed Authority]

- The Rural Water Quality Advisory Program focused on the rural municipalities of Gull Lake, Carmichael and Webb areas with 287 client wells being sampled. More clients (for a total of 359) had requested that their wells be sampled but many of the wells (72) were either closed or had collapsed so no sampling was possible. An additional 146 wells were sampled in the rural municipality of Swift Current for an annual total of 433.

- Contribute to the development of start-up protocols for oil industry to help ensure protection of groundwater resources. [2005-06 planned result - Environment]

  At the request of industry, activity on developing start-up protocols to minimize effects on private groundwater supplies was delayed and further work awaits a review by SPIGEC of similar guideline development activity in Alberta. Once SPIGEC re-establishes the priority and timing of development of these protocols, Saskatchewan Environment will participate.

Other actions important to identifying and minimizing the risks to source water quality developed and delivered during 2005-06 included the following:

Saskatchewan Agriculture and Food requires intensive livestock operations to develop waste storage and management plans that will not contaminate water resources. In 2005-06, 30 approvals were issued for intensive beef, dairy, pork and chicken operations. Some of the approvals were for expansions and/or modifications to existing operations. Surface water quality monitoring of watercourses adjacent to intensive livestock operations is continuing and the 2003 Surface Water Quality Monitoring Report For Intensive Livestock Operations will be updated to include results for 2005. The 2003 report is available at: http://www.agr.gov.sk.ca/DOCS/livestock/pork/intensive_hog_operations/ILOsurfaceWaterQuality03.asp .

Under *The Pest Control Products (Saskatchewan) Act,* there were 1,900 pesticide applicator licenses issued along with 450 pesticide vendor licenses. Each vendor maintains an approved storage facility supported by the industry and Saskatchewan Environment. An applicant for a pesticide applicator license must pass a pesticide applicator course. The applicator training is valid for a 5-year period; however the applicator license is renewed on an annual basis.

Measurement Results

Number of sewage effluent discharges that represent a risk to source waters

Table 13: Number of sewage effluent discharges that represent a risk to source waters

March 2004	March 2005	March 2006	Annual Change
93	93	85	↓ 8

Source: Saskatchewan Environment – Environmental Management System

As of March 31, 2006, approximately 85 wastewater systems have been identified as having discharge that may reach a surface water body under certain conditions (Table 13). Saskatchewan Environment has increased preventative and compliance actions to resolve problems or advance progress at 15 sewage works in the province since 2004-05. Noteworthy improvements include the commissioning of new advanced wastewater treatment plants by the cities of North Battleford and Swift Current during the reporting period. Resolution of sewage works capacity or treatment capability issues typically involves significant planning, investment and construction. Therefore, it can be expected that reductions in the number of works which represent a risk to source waters will be a time consuming process. The number of sewage effluent discharges that represent a risk to source waters is a direct indication of the potential for source water contamination due to poor wastewater treatment. This measure was selected as a performance measure, since it is the most direct measure of the number of potential contamination point

sources. This measure was established during 2003-04 and most significant follow-up actions began in 2004-05. Further work to resolve problematic wastewater systems is planned for 2006-07 and beyond.

Objective 2: Watersheds are protected, natural purification and protection processes are maximized and potential for contamination is minimized

Protection of source waters can reduce the costs of water treatment and improve water quality while helping to maintain other water uses. Sound water resource management means that the processes that break down wastes, must be protected as must land use practices that can protect source water quality from contamination. Actions in terms of both organizational structure and watershed/water management are improving source water protection in the province.

During 2005-06, significant progress was made in advancing this objective. Draft watershed protection plans have been completed and are undergoing consultation for one watershed and other plans are expected early in 2006-07. The Saskatchewan Watershed Authority completed the review of its legislation and a new *Saskatchewan Watershed Authority Act* is now in place. Consultation on the second phase of *The Planning and Development Act* has begun. Saskatchewan Environment continues to serve as "champion" of a federal-provincial initiative to improve management of municipal wastewater. Research investigating the impacts of agriculture on surface water quality was initiated in 2006. Implementation of Environmental Farm Planning, riparian protection initiatives and research on agricultural technologies for improved management and/or reduced environmental risks of pesticides and livestock manure continued.

Key Results
The key actions originally planned for 2005-06 are shown below, along with the responsible partner, followed by our actual progress towards the key action and changes affecting the status of drinking water.

- Work to lead the development of a Canada-wide Strategy for the Management of Municipal Wastewater Effluent (MWWE) will continue. This work will help aid in the development of better wastewater management practices in Saskatchewan as well as increased source water protection. This strategy is being developed through the auspices of the Canadian Council of Ministers of the Environment as a means to forward MWWE management in a consistent manner across Canada. [2005-06 planned result - Environment]

  Saskatchewan Environment continues as "champion" and "chair" of the CCME – Development Committee, which is charged with development of a Canada-Wide Strategy for MWWE. Harmonized requirements for improved management of wastewater effluents, particularly with respect to ammonia and residual chlorine based disinfectants are the intended outcomes. During 2005-06, significant progress has been made on development of an environmental risk management model to protect source waters for a variety of uses. A second round of nationally based consultations was completed. A draft strategy was being initiated at the end of the fiscal year. Further work is planned for the 2006-07 and 2007-08 fiscal years to complete the Canada-wide Strategy for MWWE and to advance implementation. Some larger communities in Saskatchewan have already initiated planning processes to improve wastewater management in accordance with early elements of this strategy and associated Canadian *Environmental Protection Act* requirements.

- Complete source water protection plans for the Assiniboine and Moose Jaw River watersheds, and the Yorkton aquifer. Continue working with local planning committees toward completion of source water protection plans in the Lower Souris, Upper Qu'Appelle, South Saskatchewan and North Saskatchewan River watersheds. [2005-06 planned result - Saskatchewan Watershed Authority]

The Saskatchewan Watershed Authority is actively supporting source water protection planning throughout the province. Excellent progress continues towards the development of plans with the assistance of local watershed and aquifer advisory committees and the support of the technical committees. The advisory committees are composed of representatives of municipal governments and First Nations, water entities established by legislation, and stewardship, producer, industry and other interest groups. These representatives are actively contributing to the process by bringing their perspectives to the table, disseminating information to their local communities, participating in awareness and stewardship activities and in some areas, commencing the important work of initiating on the ground activities to support source water protection.

The first of the draft source water protection plans has been completed. A draft plan for the Moose Jaw River watershed is under public review and is expected to be released early in the 2006-2007 fiscal year. Similarly, source water protection plans are at an advanced stage for the Assiniboine watershed and the Yorkton Aquifer and should be completed in coming months.

Saskatchewan Agriculture and Food continues to work with the Saskatchewan Watershed Authority as members of Watershed Planning Technical Committees working on the development of Watershed Planning to protect watersheds and minimize potential impacts to water resources.

The Spirit Creek Watershed Monitoring Committee (SCWMC) submitted an interim report on the work undertaken by the committee. Another report following completion of the initial projects initiated by the committee is planned for 2006. The interim report is available on the SCWMC website at http://www.spiritcreek.ca. The SCWMC was established by the Minister of Agriculture and Food in 2000 to provide independent monitoring of water resources in the Spirit Creek Watershed basin.

Research investigating the impacts of agriculture on surface water quality was initiated in 2006. This work is focused on assessing long-term trends in water quality in Saskatchewan's rivers and utilizing other database information (e.g. Ag Census data) to further develop our understanding of the landscapes and agricultural activities that influence surface water quality. It is anticipated this knowledge will facilitate more effective land management decisions and lead to improved program delivery.

- Submit legislative amendments to the legislature for 2005 to combine and modernize existing legislation. [2005-06 planned result - Saskatchewan Watershed Authority]

  Review of Saskatchewan Watershed Authority's legislation is complete and a new *Saskatchewan Watershed Authority Act*, which combined and modernized the pre-existing *Saskatchewan Watershed Authority Act* and *The Ground Water Conservation Act*, was proclaimed.

- Municipalities and stakeholders will be consulted on the second phase of the renewal of *The Planning and Development Act, 1983* that will include requiring municipalities to implement land use bylaws to protect water sources. The requirements for municipal bylaws will be co-coordinated with Saskatchewan Watershed Authority's staged implementation of protection of watersheds. This will ensure that the municipalities have bylaws in place that meet the standards required to protect the watersheds. [2005-06 planned result - Government Relations]

  Major public consultations on the second phase of the renewal of *The Planning and Development Act, 1983* began in September 2005 and are expected to be completed by June 2006. Legislation is planned for the fall 2006 legislative session. Significant aspects of the new legislation will include the adoption of provincial interests and direction on municipal land use bylaws to protect water sources. Saskatchewan Government Relations worked directly with the Saskatchewan Watershed Authority and the technical advisory committees on the development of a number of watershed plans and

participated in a number of workshops for municipalities to provide information on how to implement water source protection within local municipal bylaws.

Other actions to enhance watershed protection and water use beyond the actions planned as part of the Safe Drinking Water Strategy include:

SaskWater developed a new wastewater management system for the Town of Fort Qu'Appelle called the SaskWater-Echo Regional Wastewater Treatment System. SaskWater designed the system to be a zero discharge solution that will remove wastewater from the valley to a holding pond where the effluent can evaporate. With no wastewater being released into the environment, the natural habitat and watersheds surrounding the community will be protected, thus ensuring the quality of water and the provision of safe drinking water.

A Strategic Plan for Geographic Information Systems (GIS) at Saskatchewan Watershed Authority was developed and is an important support to effective water quality monitoring and reporting. The plan outlines a future vision for GIS within Saskatchewan Watershed Authority to improve decision-making at all levels in the most effective, efficient and coordinated manner. It will ensure Authority staff are well placed (internally and externally) to match up data and information to those individuals needing it now and in the future. Implementation of the plan is scheduled for 2006.

The Saskatchewan Watershed Authority began a Pilot Project with the Pasqua First Nation, targeted at the development of a water co-management agreement. The agreement will need to be substantially complete before a final agreement can be reached with the First Nation in the resolution of its flood claim.

Approximately 15,000 acres of cultivated land was seeded to perennial cover through Saskatchewan Watershed Authority programming with potential future benefits to watersheds including reduced soil erosion, reduced sedimentation of surface water bodies and improved condition of native rangelands.

Saskatchewan Watershed Authority staff participated in Environmental Farm Planning Workshops as technical advisors, workshop planners and coordinators. Staff assisted approximately 920 producers with the development of formal or informal Best Management Practice Plans.

Significant progress in increasing public awareness of abandoned wells continued. The Saskatchewan Watershed Authority made presentations on well decommissioning to environmental farm plan facilitators, the Saskatchewan Water and Waste Water Association annual meeting and Saskatoon Health Region public health inspectors. A proposal to the National Water Supply Expansion Program was successful and seven well decommissioning field days were held. Discussions with Prairie Farm Rehabilitation Administration and the provincial water well drillers association, both of whom would be key participants in a program, are ongoing.

Saskatchewan Agriculture and Food continues to work with the Saskatchewan Watershed Authority on several riparian enhancement and/or protection projects and in the publication of "beneficial" management practices to keep riparian areas healthy and functional. The two agencies are active partners in the pilot Agro-Equivalent Environmental Farm Plan situated in the Lower Souris River Watershed. This group plan will be the first of its kind in Canada and focuses on source water protection. Other group plans are being developed.

Saskatchewan Agriculture and Food continues to provide funding through the Agriculture Development Fund for research and development of agricultural technologies for improved management and/or reduced environmental risks of pesticides and livestock manure.

Saskatchewan Agriculture and Food is in the process of implementing "environmental farm planning" as part of the Federal/Provincial Agriculture Policy Framework. Environmental Farm Plans will help

farmers to identify environmental risks, including risks to water resources. The framework provides partial funding for the implementation of practices that reduce or minimize some of the risks identified. By March of 2006, the Provincial Council of Agriculture Development and Diversification (ADD) Boards (PCAB) – delivery agency for Environmental Farm Plans in Saskatchewan - had delivered over 350 workshops to producers in the province with over 4,000 farm units attending. PCAB has issued over 2,100 endorsements for completed farm plans and farmers have made application for funding of 1,500 projects under the Canada Saskatchewan Farm Stewardship Program to implement beneficial management practices on their farms.

Saskatchewan Agriculture and Food administers *The Irrigation Act, 1996*. The legislation ensures soils and water are suitable for sustainable irrigation. Irrigation soils, water quality and water tables are monitored for sustainability. Technical assistance is provided to Saskatchewan Environment on effluent disposal via land application to help ensure a high level of environmental protection and ongoing agricultural productivity.

Measurement Results
Water Quality Index (WQI) ratings for watersheds within the province

Table 14: Water Quality Index (WQI) ratings for watersheds within the province

2005-2006 data is not available for any of the watersheds utilized in this performance measure (Churchill, Assiniboine, Beaver River, North Saskatchewan, South Saskatchewan, Qu'Appelle, Souris and Moose Jaw rivers and Saskatchewan River Basin) and is not reported on.

* Data entry for 2005-2006 is incomplete at this time and therefore no index can be calculated.

Source: Saskatchewan Environment and Saskatchewan Watershed Authority monitoring results

The revised Saskatchewan Water Quality Index (WQI) was first applied to sites across four major waterbodies by the end of the 2003-04 fiscal year (South Saskatchewan, North Saskatchewan, Qu'Appelle and Moose Jaw rivers). To generate the WQI ratings, certain data criteria need to be met including a minimum number of samples. Due to staff vacancies and workload, insufficient samples were collected to calculate a valid WQI value (Table 14) for some rivers. Duties for collection of water quality samples have been reassigned for 2006-07. The WQI is a good measure of overall trends in water quality that may not otherwise be apparent through individual water quality test results. Water quality from surface water sources tends to change over seasons and may change over successive years as a result of pollution or other water management practices.

Measurement Results
Number of municipalities with bylaws in place to protect their drinking water supplies

This measure was established to gauge compliance with legislative amendments planned for the fall of 2006 regarding the establishment of municipal bylaws to protect drinking water sources. Since the measure is aimed at a future event, we are unable to report results for the 2005-06 fiscal year and provide trend information for this measure. As of December 2005, 22 per cent of the urban and rural municipalities have some form of water management policy contained in their community planning bylaws (12 per cent with mandatory provisions and 10 per cent with permissive or discretionary provisions).

(Source: Saskatchewan Government Relations manual filing system on municipal bylaws).

These values will serve as the baseline for reporting future year results. The number of municipalities with bylaws in place to protect their drinking water supplies is a direct indication of the level of municipal protection of water sources.

Goal 4 – Citizens and consumers trust and value their drinking water and the operations which produce it

Objective 1: Consumers value quality water and are willing to pay for it

Saskatchewan residents are not always aware of the cost of providing safe drinking water. Protection of source waters, the ability to treat source water and ensure sustainable supplies is dependant on consumers who recognize the value of water and are willing to pay for it at present and in the future.

Polling results continue to show progress in advancing public recognition of the value of water or willingness to pay for it. Polling information results collected in March, 2006 show 70.8 per cent of respondents indicate they are willing to pay more for their drinking water, an increase of 2.8 per cent since the previous poll in March, 2005.

Key Results
The key actions originally planned for 2005-06 are shown below, along with the responsible partner, followed by our actual progress towards the key action and changes affecting the status of drinking water.

- Expand the core group of trained facilitators who assist with the delivery of environmental education programs including Project Wet, Project WILD and Climate Change which are directly linked to the Saskatchewan curricula. [2005-06 planned result - Saskatchewan Watershed Authority]

  During the 2005-2006 Academic Year:
  - Three professional development Leadership Workshops were coordinated and delivered by the Authority: two offered advanced training and a total of 55 teacher facilitators were certified;
  - The Authority coordinated and sponsored the delivery of 38 Project WILD and Project WET teacher professional development workshops, certifying a total of 788 registrants;
  - The Authority expanded its extension teacher education programming to include all six Aboriginal Teacher Education programs on seven campuses in addition to programming offered to the Faculty of Education at University of Regina and the College of Education at the University of Saskatchewan;
  - Additional educational events coordinated and delivered by the Authority with partners included two Project WET 'SPLASH! Water Festival' events, one at Cypress Hills Inter-provincial Park and one at Redberry Lake with a total of 467 children, youth, parents and other adults attending; and
  - In partnership with Agri-Ed, a four day Project WET 'EarthSongs' event was delivered at Agribition with 1,068 students, teachers and parents attending.

- Promote watershed stewardship by publishing the Prairie Update newsletter, promoting best management practices through the weekly press, partner communication vehicles, signage and trade show displays. [2005-06 planned result - Saskatchewan Watershed Authority]

  Active promotion and marketing of watershed stewardship continued. Activities included:
  - publication of four issues of the quarterly Prairie Update,
  - aired a series of 30-second radio advertisements discussing watershed related issues (quality, quantity, conservation, infrastructure, etc.) on 24 Saskatchewan radio stations,

- launch of new newsletters in the Upper Qu'Appelle and Missouri Coteau areas in support of stewardship programs,
- continued publication of newsletters in the East Central and North West areas,
- produced a booklet on the North American Waterfowl Management Plan,
- wrote and distributed profile articles to Saskatchewan weekly newspapers,
- publication of a information brochure on the Lake Stewardship Program,
- participated in nine trade shows,
- promotion of workshops and field days, and
- a series of six 30 second radio spots detailing various Best Management Practices for the East Central area in conjunction with GX94 Yorkton.

- Publications (brochures) and workshop elements will be provided to inform consumers of the cost and value of water. This information will focus on the benefits for individual consumers and society by better managing water demand and consumption. [2005-06 planned result - Environment]

  Saskatchewan Environment advanced educational efforts on water cost and value directly through distribution of brochures and at water related workshops and presentations including forums such as the Saskatchewan Urban Municipalities Association annual convention and the Northern Water Workshop, etc. Additionally, through the completion of Waterworks System Assessments, greater understanding of the cost and value of water was provided directly to waterworks owners. Progress and the use of the SaskH2O website also continues as an important educational and information source for waterworks owners and the public.

  Saskatchewan Environment assisted with the delivery of a northern water workshop in April 2005 and provided a regulatory related workshop in conjunction with the Saskatchewan Water and Wastewater Association in November 2005. The department also continued to participate in the annual SUMA convention as a means to further understanding of municipalities regarding drinking water protection.

Measurement Results

Per cent of survey respondents indicating that they are willing to pay more for their drinking water

Table 15: Per cent of survey respondents indicating that they are willing to pay more for their drinking water

December 2001	May 2003	March 2005	March 2006	Change
61	61.9	68	70.8	↑ 2.8

Source: Saskatchewan Environment Polling Results – March 2006

Based on a March, 2006 poll conducted by Saskatchewan Environment, 70.8 per cent of people are willing to pay more to improve their drinking water (strongly or moderately agree) (Table 15). This value is 2.8 per cent greater than the previous poll in March 2005 and is 9.8 per cent greater than the December 2001 poll before implementation of the Strategy. The improving polling results may be related to the high level of confidence in safety of drinking water as noted for Goal 4, Objective 2 and may also be influenced by ready access to information on the importance of drinking water quality. How consumers value quality water and their willingness to pay for it is an indication of their understanding of the importance of safe drinking water and the true cost to produce it.

Objective 2: Citizens and consumers trust the quality and reliability of their drinking water systems and are confident in the regulatory system

Consumer trust in drinking water and regulatory systems that govern them is vital to ensuring the long-term sustainability of waterworks. Consumers who trust the quality and reliability of their water supplies are more willing to support the production of safe drinking water in the future. Release of polling results also bolsters transparency and public trust.

Advancement of this objective has shown consistently high confidence in the quality of drinking water. Based on a March, 2006 poll conducted by Saskatchewan Environment, 87.3 per cent of people strongly or moderately agree they are confident in the safety of their own drinking water, an increase of 1.3 per cent since March, 2005.

Key Results
The key actions originally planned for 2005-06 are shown below, along with the responsible partner, followed by our actual progress towards the key action and changes affecting the status of drinking water.

- Continue to implement the drinking water polling strategy and publish results, which will allow tracking of public opinion and trust in drinking water and the associated regulatory systems. This approach will allow the department to determine changes in opinion within the province and how those opinions compare with residents of other provinces in Canada. [2005-06 planned result - Environment]

  Saskatchewan Environment has continued to implement its polling strategy to gain important insight into public opinion associated with drinking water. The strategy employs three main tools in terms of its strategy related to public polling on water-related issues. Its primary tool is management polls conducted by the provincial government to ask questions it believes important to performing its duties regarding drinking water. When possible, the polling results produced by the GlobeScan Inc. (formerly Environics) polling company that does quarterly polling of Canadian attitudes towards environmental and natural resources issues, are used to track the department's performance in relation to other provinces. The department also, from time to time, conducts its own polling in Saskatchewan related to the overall performance of the department in relation to its mandate. Polling on drinking water-related issues will continue in 2006-07. The most recent March 2006 Saskatchewan Environment polling results are shown in the measurement results for Goal 4, Objectives 1 and 2.

Measurement Results
Per cent of survey respondents indicating that they are very or somewhat confident in the quality of their tap water

Table 16: Per cent of survey respondents indicating that they are very or somewhat confident in the quality of their tap water

December 2001	May 2003	March 2005	March 2006	Change
72	87	86	87.3	↑ 1.3

Source: Saskatchewan Environment Polling Results – March 2006

Based on a March 2006 Saskatchewan Environment poll, 87.3 per cent of people polled strongly or moderately agree they are confident in the safety of their own drinking water (Table 16). This value is a slight increase of 1.3 per cent from the March 2005 and also represents an increase of 15.3 per cent since

December 2001 when 72 per cent of people surveyed were very or somewhat confident in the quality of their tap water. Actions initiated under the Strategy such as consumer education efforts, waterworks inspections, implementation of water quality standards, water workshops and consumer notification help build public confidence in the safety of drinking water. Ongoing attention to the elements of the strategy will help to maintain the high level of public confidence in safety of drinking water in the future. The measure is important since it provides an indication of how efforts to ensure safe drinking water are progressing.

Objective 3: Citizens have meaningful access to information about the quality of their water

Information on water quality is important in building public trust in water systems. Information must be understandable, current and readily accessible. To build full trust, information needs to be available both from the waterworks owner and the regulator.

Significant progress has been made in advancing this objective. Regulations governing municipal reporting on pricing and capital investment policies were established in December 2005 and take effect in 2006. The State of the Watershed Report Framework was released in January 2006. Enhancements were made to the SaskH2O website (see http://www.SaskH2O.ca) as a means to provide direct information on drinking water quality. SaskWater published its first comprehensive water quality report with its 2005 Annual Report.

Key Results
The key actions originally planned for 2005-06 are shown below, along with the responsible partner, followed by our actual progress towards the key action and changes affecting the status of drinking water.

- Consultation and enactment is planned for regulations requiring municipalities to establish and report to the public on pricing and capital investment polices for their waterworks and other related key financial information, including the extent that waterworks revenues cover expenditures and capital debt payments. These regulations will provide greater municipal accountability to ratepayers and promote greater understanding of municipal waterworks. Ratepayers can evaluate this information and determine if they are satisfied with the rate and capital investment policies. Municipal waterworks rate and capital investment bylaws are to be in place by July 1, 2006 and annual public reporting is to begin September 1, 2006. [2005-06 planned result - Government Relations]

  In the spring of 2005, a second round of consultations on simplified regulations was undertaken with the municipal sector and other stakeholders outside of government. The regulations were established in December, 2005 and are effective in 2006.

- Publish state of watershed reports. Prepare plan for preparation of future reports based on public comments on the State of Watershed Reporting Framework. [2005-06 planned result - Saskatchewan Watershed Authority]

  The State of the Watershed Report Framework was released in January of 2006.

- Technical aspects of a Drinking Water Quality Index (DWQI) will be examined to determine how best to include current information to convey information to consumers on water quality and the adequacy of systems that produce drinking water. The DWQI is intended to provide a means for consumers to understand the relative quality of their water (e.g. fair to excellent) and the state of the waterworks which produce it. [2005-06 planned result - Environment]

Saskatchewan Environment has researched and evaluated the possibility of developing a drinking water quality index that may give a numeric and narrative description of water quality and treatment capability for each system. At present the department is determining the application of a drinking water quality index developed by Newfoundland as a means to provide more meaningful information (see: http://www.env.gov.nl.ca/env/Env/waterres/Surfacewater/DWQI/DWQI.asp). Once fully developed in the coming year, the index will be published on the SaskH2O website.

In addition to progress made on planned actions, other key accomplishments included:

SaskWater published its first comprehensive water quality report with its 2005 annual report. SaskWater reports on provincial, national and National Primary Drinking Water Standards established by the United States Environmental Protection Agency. SaskWater also gathers water consumption and water quality information for Indian and Northern Affairs Canada to determine the state of water quality in Northern Saskatchewan.

Measurement Results
Number of system owners that publicly release water quality results

Table 17: Number of system owners that publicly release water quality results

March 2002	March 2003	March 2004	March 2005	March 2006	Annual Change
3	118	359	508	494	↓ 14

Source: Saskatchewan Environment – Environmental Management System

As of March 31, 2005, 494 of waterworks owners publicly released water quality results to the consumers that they serve (Table 17). This value represents a slight decrease since the 2004-05 fiscal year. Notification of consumers is required on an annual basis for waterworks regulated by Saskatchewan Environment. Saskatchewan Environment will continue to pursue further progress on attainment of public reporting requirements during 2006-07 and beyond. The number of system owners that publicly release water quality results is a good way to determine if consumers have direct, meaningful access to information about the quality of their water.

Objective 4: Reduced consumption of water

Reduced consumption of water is important in minimizing costs and thereby properly valuing water. Water conservation is also necessary to protect water source quality and abundance, particularly in time of increased demand.

Based on the latest available information, average provincial water consumption decreased in 2004 to 333 litres per capita per day or 73.2 imperial gallons per day, a decrease of 9.8 per cent from 2004.

Key Results
The key action originally planned for 2005-06 is shown below, along with the responsible partner, followed by our actual progress towards the key action and changes affecting the status of drinking water.

- Complete the Water Conservation Plan, based on input from public consultations, by the end of 2005. Public education and information materials will be developed and distributed to enhance consultation on the Water Conservation Plan and to promote water conservation. [2005-06 planned result - Saskatchewan Watershed Authority]

The plan will be finalized and released during 2006. Current activities include defining the scope and priorities of the plan for implementation and the development of a publicly released document.

In addition to progress made on planned actions, other key accomplishments included:

The adoption of low water use fixtures and the benefits of lower costs associated with reduced consumption are emphasized during discussions with communities. SaskWater promotes the efficient utilization of infrastructure capacity such as community water allocations (i.e., from a regional water supply system), which will benefit from more accurately reflecting actual water usage. In addition, SaskWater continues to promote the user pay concept, the need to manage utilities on a commercial basis and the need for communities to carefully consider the tradeoffs between quality/cost and quantity/price when they seek a solution to their water needs.

Measurement Results
Average per capita consumption [gallons per day]

Table 18: Average per capita consumption [gallons per day]

2000-01	2001-02	2002-03	2003	2004	2005-06	Annual Change
80.3	80.7	77.4	81.2	73.2	NA	↓9.8

NA: Not Available

Source: Saskatchewan Watershed Authority

Average provincial consumption for the period January 1 to December 31, 2004 was 333 litres per capita per day (73.2 imperial gallons) (Table 18). A complete dataset for 2005 is not currently available. The database source of the performance results for this measure has a time lag of about six months; January 1 to December 31, 2005 data will be available in July 2006.

Reduction of water is partly the result of promotional efforts by SaskWater as well as greater general emphasis through application of the Strategy on the true value of drinking water quality.

During 2005-06, brochures that focus on water use in and around the home were distributed to help reduce water consumption by domestic water users.

2005-06 Financial Results

The following table outlines information on the actual and budgeted expenditures relating to the Safe Drinking Water Strategy. Funding for this Strategy comes from various government departments and agencies and is contained in their respective budgets. Variance explanations have been provided for all variances that are greater than $5,000.

(in thousands of dollars)

Department	Budget	Actual Expenditure	Variance Over (Under)
Saskatchewan Environment	**3,006***	**2,722**	**(284)**[1]
Saskatchewan Watershed Authority**	**6,165**	**6,165**	**0**
Saskatchewan Government Relations			
- CSIP	10,760	6,389	(4,371)[2]
- C-SMRIF	3,420	2,237	(1,183)[2]
Saskatchewan Government Relations - Total	**14,180**	**8,626**	**(5,554)**[2]
Saskatchewan Health			
Regional Health Services			
- Regional Health Authorities Base Operating Funding	456***	456	
- Regional Targeted Programs and Services	30	27	(3)
- Regional Programs Support	20	0	(20)[3]
Provincial Laboratory – Environmental Services	683***	683	
Saskatchewan Health - Total	**1,189**	**1,166**	**(23)**[3]
Total	**24,540***	**18,679**	**(5,861)**

*Funding was reduced by $100K from a budget for Saskatchewan Environment of $3,106K in the 2005-06 Performance Plan for the Safe Drinking Water Strategy as a result of provision of free water quality analytical services by the Provincial Laboratory for waterworks inspections and related activity performed by Saskatchewan Environment.

** Expenditures shown are grants from the General Revenue Fund to the Saskatchewan Watershed Authority for these programs.

*** This amount does not include additional funding provided to health regions and the Provincial Laboratory to offset increases to salaries and benefits through collective bargaining agreements.

Explanations of Major Variances

[1] Under expenditure resulted from prolonged staffing activities and secondment opportunities encountered by Saskatchewan Environment, Drinking Water Quality Section during the fiscal year. Saskatchewan Environment's FTE utilization for drinking water related programming during the 2005-06 fiscal year totaled 34.4 of 37.7 budgeted FTEs. These vacancies resulted in a net reduction in the rate of waterworks and sewage works inspections during the fiscal year for Saskatchewan Environment.

[2] The 2005-06 budget provided an estimated $10.76 million under CSIP and $3.4 million under the C-SMRIF for water and sewer projects. By the end of the year, $6.4 million was spent on the CSIP projects and $2.2 million was spent on the C-SMRIF projects. The full amounts budgeted were not spent

because some projects were delayed and have been rolled over to the following year. Also, the actual cost of some projects came in below the estimated cost.

[3] Budget indicates provision of $20,000 not expended to date to implement changes in the water testing protocol for remote northern water systems that are regulated by Saskatchewan Health.

For More Information

Further information on the Safe Drinking Water Strategy and information contained in this report is available on the SaskH2O website (http://www.SaskH2O.ca) and on Saskatchewan Environment's website (http://www.se.gov.sk.ca/environment/protection/water/water.asp). Further detailed information on the status of drinking water in Saskatchewan is available from Saskatchewan Environment or at the SaskH2O website (http://www.SaskH2O.ca/news.asp or http://www.SaskH20.ca/MyDrinkingWater.asp).

A performance plan for the Safe Drinking Water Strategy for the 2005-06 fiscal year was published on March 23, 2005 with the release of the 2005-06 provincial budget. A copy of the plan for the 2005-06 Safe Drinking Water Strategy is available on the Internet at http://www.saskh20.ca/news.asp or (http://www.se.gov.sk.ca/environment/protection/water/2005-06PerformancePlan-DrinkingWater.pdf). Next year's annual report will address both the status of drinking water and the published 2006-07 strategic plan.

Further information is also available by contacting:

Drinking Water Quality Section
Environmental Protection Branch
Saskatchewan Environment
3211 Albert Street
REGINA, SK S4S 5W6
Telephone: (306) 787-6504

or at Saskatchewan Environment's inquiry center, toll free in Saskatchewan at 1-800-567-4224.

Feedback on the performance results may also be provided to Saskatchewan Environment through the contact information immediately above.

An electronic copy of this report is available on the Internet (http://www.SaskH2O.ca/news.asp).